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WEED ABSTRACTS

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NOTES FOR READERS OF WEED ABSTRACTS

Weed Abstracts endeavours to provide a comprehensive coverage of the world's literature on weeds, weed control and closely allied subjects. To this end over 370 journals and nearly 100 annual reports are regularly searched. Other journals, reports, bulletins, etc. are abstracted as they are seen. Additional coverage is obtained through agreements with other abstracting organisations.

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As far as possible journal abbreviations given in the World List of Scientific Periodicals are used. Holding libraries in Oxford and elsewhere are also taken from the World List, e.g. O.BO. = Botany Department, Oxford. Numbers at the end of abstracts, e.g. 75(492) are for internal use only.

When a paper is by more than one author, only the address of the first author is given.

Where an abstract is taken from an abstracting journal the acknowledgement follows the abstract, e.g. Herb.Abstr., 2,163. Where it is only quoted in part the acknowledgement is preceded by the word "from", e.g. From Biol.Abstr., 2,294.

The Information Section is always pleased to receive comments and suggestions for the improvement of Weed Abstracts.

* An asterisk before the author's name indicates that only the title of the paper has been seen.

Continued from the inside back cover.

ac	- acre(s)	in.	- inch(es)	p.s.i.	- pounds per square in.
a.e.	- acid equivalent	kg	- kilogram(s)	v/v	- volume/volume
a.i.	- active ingredient	l	- litre(s)	w/v	- weight/volume
cm	- centimetre(s)	lb	- pound(s)	w/w	- weight/weight
d.b.h.	- diameter at breast height	m	- metre(s)	>	- greater than
		ml	- millilitre(s)	<	- less than
ft	- foot (feet)	oz	- ounce(s)	#	- pounds per acre
g	- gram(s)	post-em.	- post-emergence	±	- with or without
gal	- gallon(s)	pre-em.	- pre-emergence		
ha	- hectare(s)	p.p.m.	- parts per million		

Language abbreviations: an initial capital denotes the language of the article, a small letter that of the summary: - Dan. - Danish, Du. - Dutch, E. - English, F. - French, G. - German, It. - Italian, Jap. - Japanese, Nor. - Norwegian, Russ. - Russian, Span. - Spanish, Sw. - Swedish.

See also 798,880,886,887,890,921.

771. GIGGER, R.P. and FLANAGAN, J.H. A report on atrazine post-emergence in corn-weed control and plant residue analyses. Proc.14th NEast.Weed Control Conf., 1960, 231-6, tabs.3.

Atrazine was sprayed on weeds before emergence and after emergence at various stages up to 12 in. tall. It was most effective from emergence to the 1.5 in. stage. 2-2.75 # was necessary for the control of Setaria viridis and S. lutescens and rather over 2.25 # for the control of Echinochloa crus-galli. Maize treated when 5 in. high was unaffected by the highest rate used - 8 #. Residue studies showed that after 8 # only 0.07 p.p.m. was detectable after 3 weeks. Simazine gave better grass control than atrazine. - L.Z. [O.W.]

772. MEGGITT, W.F. (Rutgers Univ.,New Brunswick,New Jersery,U.S.A.) Progress report on herbicides for weed control in corn and soybeans. Proc.14th NEast.Weed Control Conf., 1960, 259-65, tabs.3.

Maize. Atrazine 2 # gave higher yields of New Jersey No. 9 maize when applied 10 days after emergence than at or before emergence, or than pre-em. applications of simazine 2 #, 2,4-D (ester) 2 #, EPTC 5 #, R-1607 (propyl dipropylthiolcarbamate) 5 #, R-2060 (ethylethyl butylthiolcarbamate) 5 #, R-2061 (propyl ethyl butylthiolcarbamate) 5 # or Amitrol-T (amitrol + ammonium thiocyanate) 0.75 #; only EPTC and 2,4-D yielded significantly (just) less than the cultivated control. All compounds except Amitrol-T gave 68-100% control of broadleaf weeds and grasses, atrazine being best.

Soybeans. Pre-em. applications of dinoseb (spray and granular) 5 #, chlorpropham 8 #, NPA (granular) 6 #, Amiben (3-amino-2,5-dichlorobenzoic acid) 2-8 #, Zytron (O-2,4-dichlorophenyl-O-methylisopropylphosphoroamidothioate) 5 and 10 #, Dacthal (dimethyl-2,3,5,6-tetrachloroterephthalate) 4-12 #, EPTC 4 #, R-1607 4 #, R-2060 4 #, R-2061 4 # were made to Clark soybeans. There were no significant differences in yields; however, yields >10% greater than the control were given by Dacthal 8 # and R-2060, the former gave 78% weed control, the latter ca. 50%. Much the best control of grass and broadleaf weeds was given by dinoseb and Amiben. Ragweed [Ambrosia artemisiifolia] was not eradicated by Dacthal 8 #. - L.K. [O.W.]

773. WINGRIS, J. (Univ.,Amherst,Mass.,U.S.A.) Weed control in field corn. Proc.14th NEast. Weed Control Conf., 1960, 367-9, tabs.1, bibl.1.

Yields equal to the weeded control were given by EPTC (incorporated) 4 and 6 # pre-planting, Randox [CDAA] 4 # pre-em. and Urab [fenuron-trichloroacetate] 1.5 # pre-em. Lower yields (but not significantly lower) were given by EPTC 2 #, simazine 1 or 2 # pre-em., atrazine 2 # pre-em. or spike stage, 2,4-D (amine) 0.5 # post-em., dinoseb 6 # pre-em. or 3 # spike stage, diuron 1 or 2 # pre-em., Fenac [2,3,6-trichlorophenylacetic acid] 1 or 2 # pre-em., Randox 2 or 4 # + 2,4-D 1.5 # pre-em. or 4 # + 0.5 #, Zytron [O-(2,4-dichlorophenyl)-O-methylisopropylphosphoroamidothioate] 5 or 10 # pre-em. Significantly lower yields were given by 2,4-D (ester) 1.5 # pre-em., Fenac 4 # pre-em. and Urab 4.5 # pre-em. Only Urab 4.5 # yielded less than the unweeded control. The weeds were crabgrass [Digitaria spp.], barnyard grass [Echinochloa crus-galli], red root pigweed [Amaranthus retroflexus] and lambquarters [Chenopodium album]; some Cyperus esculentus was present and this was excellently controlled by EPTC 4 or 6 #. - L.K. [O.W.]

774. MEGGITT, W.F. (State Univ.,New Brunswick, N.J.,U.S.A.) The influence of cultivation on corn yields when weeds are controlled by herbicides. Proc.14th NEast.Weed Control Conf., 1960, 241-6, tabs.4,bibl.2.

The effect of 0, 1, 2 and 4 cultivations + herbicides on the yield of maize was evaluated for 2 soil types, and for conditions where maize followed row crops or a sod crop. Results showed that 1, or in some cases up to 4, cultivations are needed to give maximum maize yields on most soil types except those which are of a light texture and are in excellent tilth as a result of previous cropping; in most cases there is no advantage in more than 1 cultivation. Simazine 2 # pre-em., 2,4-D (ester) 1.5 pre-em., 2,4-D (amine) 0.5 # post-em., and atrazine 2 # pre-em. gave good weed control throughout the season without any cultivation. A 12 in. weed free band over the row + 1 cultivation was not sufficient to eliminate weed competition. - J.W.B. [O.W.]

775. TREVETT, M.F. and GARDNER, W.E. (Univ., Orono,Maine,U.S.A.) Control of annual weeds in sweet corn. Proc.14th NEast.Weed Control Conf., 1960, 188-95, tabs.6.

In sweet corn (var. Carmel Cross), simazine wettable powder 2 # (1) applied at emergence or (2) at planting, atrazine (3) and trietazine (4) 2 # at planting, and dinoseb 1.5 # + dalapon 1 # (5) at spike stage, all gave yields statistically equivalent to the standard treatment of dinoseb (6) 6 # at emergence; Fenac (2,3,6-trichlorophenylacetic acid) (7) 2 # at planting gave lower yield, but only DAC-893 (dimethyl-2,3,5,6-tetrachloroterephthalate) at 4 # (8) and 8 # (9) at planting produced significantly lower yields. Compared with weed control obtained with (6), significantly higher broad-leaved weed control was given by (1), (2) and (3), and of annual grasses by (1), (2), (3) and (9); significantly lower broad-leaved weed control was given by (5). (8) and (9). The principal broad-leaf weeds were Brassica nigra, Amaranthus retroflexus, Chenopodium album; and the annual grasses were Echinochloa crus-galli and Setaria viridis. - J.W.B. [O.W.]

776. ILNICKI, R.D. (Agric.Exp.Sta.,Rutgers Univ.,New Brunswick,N.J.,U.S.A.) The effects of 2,4-D, 4-(2,4-DB), 2-(2,4-DP), and Silvex on wheat and spring oats. Proc.14th NEast. Weed Control Conf., 1960, 266-7.

The compounds were applied at 0.25-2 or 4 #. When applied pre-em. in wheat 2,4-DP was the most toxic compound followed by 2,4,5-TP, 2,4-D and 2,4-DB; at the 3-5 leaf stage 2,4-D was the most toxic followed by 2,4-DB, 2,4-DP and 2,4,5-TP. 2,4-D and 2,4,5-TP were more toxic to oats than 2,4-DB or 2,4-DP. - L.K. [O.W.]

777. CHIAPPARINI, L. Sul diserbo selettivo del frumento con sostituti degli acidi α(4-chloro-2-metilfenossi)propionico (CMPP) e (2-metil-4-chloro-fenossi) butirrico (MCPB) e sula sensibilita agli stessi di alenni erbe spontanee. [Selective weed control in wheat with substituents of alpha (4-chloro-2-methyl phenoxy) propionic acid (mecoprop) and 2-methyl-4-chlorophenoxybutyric acid (MCPB) and on the susceptibility of some weeds to these. Not.sulle Mal.delle Piante, 1959, 49/50, 194-204, (It.e.), tabs.4,bibl.1.

Mecoprop (amine) caused no injury to wheat, var. San Pastore when applied in 900 l water/ha at 1.6 kg/ha at the 3-leaf stage or at 1.920 kg/ha at the 5-6 leaf stage. When applied in 100-200 l/ha to vars. San Pastore and Mara at the 5-6 leaf stage rates of 2.34-2.66 kg/ha caused slight scorch; this however did not affect growth and may be attributable to uneven distribution. Mecoprop (potassium) was evidently less toxic than the amine and caused no scorch or injury when applied at low volume at 2.84 kg/ha. Applied to undersown ladino clover 1 month after sowing, at the first true-leaf stage, mecoprop (amine) 1.6-1.9 kg/ha in 900 l/ha killed the clover whereas MCPB (sodium) 1.6 kg/ha only reduced it by 31.25%.

When applied to weeds in active growth, mecoprop (amine and potassium) at 1.92-2.30 kg/ha was more toxic to Artemisia vulgaris, Cirsium spp., S. media, S. aquatica, Ranunculus ficaria, Rumex spp. and V. persica than 2,4-D (ester) 0.27 kg/ha, and more toxic to Cirsium spp., Fumaria spp., M. chamomilla, S. media, Polygonum aviculare, Rumex spp. and V. persica than MCPA (triethanolamine) 0.43 kg/ha. - D.M.L.S. [61(45)]

778. ROSHER, P.H. I.C.T.A. Herbicide Unit. Extract from report April 1958-March 1959. Pest.Abstr.News Summ.(C), 1960, 6, (1),9-12.

It appears that rice will tolerate up to 8 # dinoseb pre-em.; dinoseb 0.75 + MCPA 1 # post-em. will control most weeds that are of importance in Trinidad. Many experiments suggest, that under conditions of adequate rainfall and as long as emergence is not affected, weeding does little to increase maize yields. Soybeans and cowpeas are sensitive to MCPB when rain occurs. Rainfall also affects the response of groundnuts but MCPB 2 # 3 days after sowing appears to be safe or 1 # one or 2 weeks after emergence or up to 4 # after 3 weeks. Yams will tolerate repeated applications of chlorpropham 6 # post-em.; 2,4-D (amine) has been applied pre-em. up to 4 # without injury. Greenhouse tests suggest groundnuts will tolerate 5.5 # 2,4-DB applied pre-em.; however, rainfall may decrease the crops tolerance. - L.K. [O.W.]

779. SAWYER, R.L., DALLYN, S.L., COLLIN, G.H. and THORNE, W.H. (Coll.Agric.,Cornell Univ.,Ithaca,N.Y.,U.S.A.) Progress report on potato vine killing. Proc.14th NEast. Weed Control Conf., 1960, 123-4, tabs.1.

Adding sodium silicate 2 or 4 gal/ac to sodium arsenite decreased the latter's effect but increased yields and specific gravity; however, all treatments yielded less than the controls. There were no significant effects on skin injury. - L.K. [O.W.]

780. BELL, R.S. and LARSSEN, E. (R.I. Agric.Exp.Sta.,Kingston,U.S.A.) Pre-emergent and post-hilling weed control tests with Katahdin potatoes 1958-59. Proc.14th

NEast.Weed Control Conf., 1960, 201-6, tabs.4.
In the pre-em. tests Dinoben [3-nitro-2,5-dichlorobenzoic acid] 2,4-7.2 #, propazine 2 #, 2,4-D (amide) 1.5 #, EPTC 6 #, dinoseb 3 #, dinoseb 2 + dalapon 1.7 or 2.46 #, trietazine 2 #, Fenac [2,3,6-trichlorophenylacetic acid] 2 #, 3Y9 4 #, Urab [fenuron trichloroacetate] 2 #, Amiben [3-amino-2,5-dichlorobenzoic acid] 2 #, simazine 2 #, and atrazine 2 # were applied. None of the chemically treated plots yielded as well as those tractor cultivated 3 times; however, good yields and good weed control were given by dinoseb + dalapon and where grass weeds were not a problem by dinoseb alone and by trietazine; Fenac was particularly injurious. In the post-hilling trials where only grass weeds were a problem the cultivated check was outyielded only by 3Y9 4 #; good yields were also obtained on plots treated with trietazine 2 #, simazine 2 #, Amiben 2 #, 2,4-D (amide) 1.5 #, diuron 1.6 # and 2,4-DES 2.4 #; the other treatments were atrazine 2 #, Urab 2 #, Fenac 2 #, dalapon 2.46 #. - L.K. [O.W.]

781. TREVETT, M.F., MURPHY, H.J. and GARDNER, W. (Univ., Orono, Maine, U.S.A.) Control of annual weeds in potatoes. Proc.14th NEast.Weed Control Conf., 1960, 207-13, tabs.4.
Katahdin potatoes were treated at planting with Dacthal (dimethyl-2,3,5,6-tetrachloroterephthalate) 4, 6 and 8 #, trietazine 1, 2 and 4 #, 3Y9 4 #, EPTC (incorporated) 6 #, Zytron (O-2,4-dichlorophenyl-O-methylisopropylphosphoroamidothioate) 3 # and at emergence with dinoseb 3 + dalapon 2.22# and hexachloroacetone 3.3 and 6.5 #. Annual broadleaf and grass weeds were present. Much the best yield was given by dinoseb + dalapon and followed by Dacthal 6 # then by trietazine 2 #; yield appeared to be correlated with weed control. - L.K. [O.W.]

782. SAWYER, R.L., DALLYN, S.L., COLLIN, G.H. and THORNE, W.H. (Coll.Agric., Cornell Univ., Ithaca, N.Y., U.S.A.) Lay-by weed control in potatoes. Proc.14th NEast. Weed Control Conf., 1960, 129-30, tabs.2.
When applied as granular formulations to a moist soil in late July to Katahdin potatoes, particularly promising results (as bushels/ac No. 1 potatoes) were given by EPTC 4 #, dalapon 1 # and 3Y9 4 #; good results were given by simazine 1.5 # and Amiben [3-amino-2,5-dichlorobenzoic acid] 2 and 4 #. Yields were significantly less than the control on plots treated with EPTC 2 #, diuron 0.75 #, dalapon 3 #, Alanap 10 G [NPA] 4 #, Amiben 2 # and Urab [fenuron trichloroacetate] 1 and 3 #. More than 70% control of (unspecified) weeds was given by only EPTC 4 #, simazine, 3Y9, dalapon 3 #, Alanap and Amiben. - L.K. [O.W.]

783. SAWYER, R.L., DALLYN, S.L., THORNE, W.H. and COLLIN, G.H. (Coll.Agric., Cornell Univ., Ithaca, N.Y., U.S.A.) Eptam for nutgrass control in potatoes. Proc.14th NEast.Weed Control Conf., 1960, 111-2, tabs.1.
Granular EPTC 4 and 6 # applied to Katahdin potatoes on May 18th before emergence of either potatoes or nutgrass [Cyperus esculentus] and just prior to the first 3 cultivations on May 22, 28 and June 10 gave commercial nutgrass control especially after application pre-em. and at the second cultivation which was particularly deep. Control of grasses and broad leaves except smartweed [Polygonum hydropiper] was also good. Yields were not affected. Less than 10% of tubers from treated plots had shoots or nuts growing in them whereas control tubers were nearly all affected. There were no consistent differences between the rates. - D.M.L.S. [O.W.]

784. SUTHERLAND, M.L., McLANE, S.R. and RAHN, H.L. (Amchem.Products, Ambler, Penn., U.S.A.) The response of soybeans to several substituted benzoic acids. Proc.14th NEast. Weed Control Conf., 1960, 31-9, figs.2, tabs.3, bibl.3.
Pure Dinoben [3-nitro-2,5-dichlorobenzoic acid] had less effect on the height and weight of soybeans than pure Amiben [3-amino-2,5-dichlorobenzoic acid]; however, the 6-nitro isomer which occurred as a contaminant was very injurious, whereas, the 6-amino isomer to which it was reduced in the production of Amiben was less so. Dinoben tended to have a greater formative effect than Amiben. The 2,5-dichloro-, the 2,3,5-trichloro-, and 2,3,6-trichloro-benzoic acids were all more injurious. - L.K. [O.W.]

785. MEADE, J.A. and SANTELMANN, P.W. (Agric. Exp.Sta., Coll.Park, Md, U.S.A.) Weed control in Maryland soybeans. Proc.14th NEast.Weed Control Conf., 1960, 253-8, tabs.4.
In 1 or 2 years trials yields greater than the scraped control were given by pre-em. applications of CDAA 4 # (liquid and granular), EPTC 2 # (granular), Amiben (3-amino-2,5-dichlorobenzoic acid) 2 #, dinoseb 4 and 6 # (liquid and granular), Zytron (O-2,4-dichlorophenyl-O-methylisopropylphosphoroamidothioate)

12 # and 2,4-D (amide) 0.75 #. Lower yields were given by 2,4-D (granular) 1 #, Dacthal (dimethyl-2,3,5,6-tetrachloroterephthalate) 4 # and by lower rates of some of the other compounds. EPTC gave higher yields but poorer weed control when not incorporated. - L.K. [O.W.]

786. WAKEFIELD, R.C. and HULL, R.J. (Agric. Exp.Sta.,Kingston,R.I.,U.S.A.) Chickweed control in alfalfa seedings. Proc.14th NEast. Weed Control Conf., 1960, 320-6, tabs.2, bibl.7.

Excellent control of Stellaria media with little or no injury to autumn sown lucerne was given by neburon 2 # pre-em. or 1 # early (1-2 leaf stage) or late (3-6 leaf stage) post-em.; EPTC 4-8 # surface or 4 # incorporated pre-em.; diuron 0.5-1 # late post-em. dinoseb 0.75-1 # early or late post-em. and chlorpropham 1-2 # early or late post-em. Injury was caused by 2,4-DB 2 and 4 # pre-em. and diuron 0.5 and 1 # early post-em. - L.K. [O.W.]

787. LAURIN, R.E. Forage crops, hay and pasture. [6 reports]. Res.Rep.W.Sect.Nat. Weed Comm.Canada, 1959, 94-8.

Satisfactory control of susceptible broad-leaved weeds in seedling lucerne was obtained with 2,4-D and MCPA amines (0.25-0.5 #), and 2,4-DB and MCPB esters and sodium salts (1.0-1.5 #) without adversely affecting the final yield of the crop. Sweet clover was more susceptible, especially to 2,4-DB and MCPB esters and 2,4-D amine.

2,4-DB and MCPB butyl esters (1) and (2), and sodium salts (3) and 4) 1 to 1.5 #, 2,4-D (amines) (5) and MCPA (diethanolamine) (6) 0.25-0.5 #, were applied to lucerne, sweet clover, alsike clover, and red clover all at the 3-5 leaf stage. Lucerne - all chemicals gave excellent kill of a light infestation of annual weeds, (1) gave the highest yield and none of the treatments suppressed the crop; where a companion crop of oats was grown there was no difference between the mean yield of treated and untreated plots. Sweet clover - (1) and (2) resulted in severe losses of stand and yield; (6) gave satisfactory weed control and gave increased yield; a companion crop of oats caused a reduction in the yield. Alsike clover - none of the treatments resulted in marked yield increases but all yielded more than the control except (1). Seeding with oats resulted in increased yields. Red clover - similar results to sweet clover, (6) resulted in the best yield but all treatments increased yield to more than that of the control, except (1). Seeding with oats reduced the mean forage yield on untreated plots by 400 #.

Pre-planting treatments of EPTC, chlorpropham, CP-15336 (2,3-dichloroallyldiisopropylthiolcarbamate) and Dow H1329 (O-2,4-dichlorophenyl O-methyl isopropylphosphoroamidothioate) had no detrimental effect on red clover and lucerne, and satisfactory control of wild oats was obtained. Niagara 5996 (2,6-dichlorobenzonitrile) also had no detrimental effect on the legumes but did not control the weeds. 2,3,6-TBA severely checked the legumes.

Kentucky bluegrass and 1 year old creeping red fescue were sprayed on July 11th with 5, 15 and 30 lb Fenac (2,3,6-trichlorophenylacetic acid) liquid sodium salt or amide wettable powder, in 30 gal water/ac. The bluegrass showed moderate burning from 15 #, and pronounced foliage injury from 30 # of amide, and slight to severe burning from the 5 to 30 # of sodium salt. The fescue was not affected by the amide, but showed some burning from 15 and 30 # of sodium salt. Couch was undisturbed by all treatments.

2,4-D (amines) (5), MCPA (butyl ester) (7), 2,4-DB (sodium salt) (3), MCPB (sodium salt) (4), and 2,4-DB + MCPB (sodium salts) (9) at 2 # in 34 gal water did not injure bromegrass or crested wheatgrass, (applied when grasses and weeds were 2-4 in. high). Satisfactory control was obtained of Salsola pestifer by (5), Chenopodium album by (5), (7) and (4), Portulaca oleracea by (7), Lappula echinata by (5) and (7), Thlaspi arvense by all treatments, Descurainia sophia by (5), (7) and (4), and Capsella bursa-pastoris by (5) and (7).

A table lists the results of applying the following compounds at rates from 0.2 to 8 # to seedling legumes 2-5 in. high:- MCPA (butyl ester), 2,4-D (mixed amines), MCPB (sodium salt), 2,4-DB (sodium salt), MCPA (mixed amines) and MCPA + 2,4-DB. - J.W.B. [O.W.]

788. BELL, R.S. and LARSSEN, E. (Rhode Island Agric.Exp.Sta.,U.S.A.) Pre-emergent weed control in silage corn, 1958-59. Proc. 14th NEast.Weed Control Conf., 1960, 364-6, tabs.2.

Where few weeds were present pre-em. applications of simazine 6 # gave yields (in tons dry weight/ac) of 3.78, 4 # 3.5; 2,4-D (amide) 2 # 3.67; EPTC (incorporated) 10 # 3.67, 5 # 3.17; hand hoeing 3.38.

Where weeds were present and where all compounds gave good weed control yields were: atrazine 2 # (granular) 5.2, (spray) 4.6; simazine 2 # (spray) 4.7, (granular) 4.4; hand hoeing 4.3; 3Y9 4 # 4.1; Fenac (2,3,6-trichlorophenylacetic acid) 2 # (spray) 3.9, (granular) 3.2. - L.K. [O.W.]

789. OLEINIKOVA, T.K. [New ways of controlling dodder in lucerne.] Selsk. Uzbekistana, 1959, (4),30-1, (Russ.)
For the control of dodder [Cuscuta spp.] in lucerne it is recommended that magnesium chlorate be applied after the second harvest. - L.K.

790. FERTIG, S.N., MEADOWS, M.W. and BAYER, G. (Cornell Univ.,Ithaca,N.Y., U.S.A.) The control of perennial weeds in established birdsfoot trefoil stands. Proc.14th NEast.Weed Control Conf., 1960, 308-13, tabs.3.
2,4-D, 2,4-DB, 2,4,5-TP and various mixtures of these were applied to birdsfoot trefoil. The mixtures and 2,4,5-TP were the most injurious. Spring treatments produced most injury, October 30th treatments the least (and with the best weed control) and late September treatments intermediate. 2,4,5-TP appears to have given the best control of Potentilla recta and 2,4-D of Cichorium intybus and Taraxacum officinale. Var. Empire was more tolerant than Viking. - L.K. [O.W.]

791. VENGRIS, J. (Univ.,Amherst,Mass., U.S.A.) Annual weed control in new grass-legume seedings. Proc.14th NEast.Weed Control Conf., 1960, 374-8, tabs.1,bibl.3.
(1) EPTC 2 and 4 # pre-sowing, (2) TCA 6 and 9 # pre-em., (3) Randox [CDAA] 4 and 8 # pre-em., (4) neburon 2 and 4 # pre-em., (5) dalapon 2 and 4 # post-em., (6) 2,4-DB 1.5 and 3 # post-em., (7) 2,4-DB 1.5 + dalapon 2 or 4 # post-em., (8) dinoseb 1 # post-em., (9) dalapon 2 + dinoseb 1 # post-em. and (10) diuron 2 + 2,4-DB 1.5 # post-em. were applied to 5 crops for the control of annual broadleaf and grass weeds. In lucerne the best results were given by 2,4-DB 3 # and EPTC; stands poorer than the control resulted from CDAA 8 #, dinoseb and dalapon + dinoseb. In Ladino clover EPTC and 2,4-DB were again best and stands less than the control were on plots treated with dalapon 4 #, and particularly (10). In trefoil EPTC and CDAA 8 # were best and poorer stands resulted from CDAA 4 #, neburon, 2,4-DB, dalapon + 2,4-DB, dinoseb, diuron + 2,4-DB and especially dalapon + dinoseb. In orchard grass EPTC and diuron + 2,4-DB were particularly injurious; there was also some stand reduction with dalapon 4 #, though 2 # gave the best stands. In timothy EPTC, neburon 4 # and diuron + 2,4-DB caused marked reductions in stand, while particularly good results derived from TCA, dalapon 2 # and/or 2,4-DB. - L.K. [O.W.]

792. PETERS, R.A. (Agric.Exp.Sta.,Storrs, Conn.,U.S.A.) Observations on the use of herbicides for renovation of non-tillable pastures. Proc.14th NEast.Weed Control Conf., 1960, 314-19, tabs.1,bibl.5.
Eight years' experiments are briefly described, in which sodium chlorate, ammonium thiocyanate, TCA, monuron, chlorpropham, endothal, oils, dinoseb, 2,4-D, 2,4-DB, dalapon + amitrol, and dalapon + 2,4-DB were tested for sod destruction. It is considered that the most promising treatment is dalapon 7.5-10 # + amitrol 2-4 # applied in the late autumn to closely grazed herbage and that it should be followed by "frost-crack" sowing early in the following spring. - L.K. [O.W.]

793. KYDD, D.D. (Grassland Res.Inst., Hurley,Maidenhead,Berks,England). Management and improvement of old pasture. Grassl.Res. Inst.Exp.in Progr.2. Ann.Rep.1957-8, 1959, 23-5.
Treatment of swards with dalapon and 2,4-D ester necessitated greater control of Festuca rubra for successful oversowing. - From Herb. Abstr., 30,15. - D.M.L.S.

Noted

794N. UNITED STATES. Pasture weed control. Ext.Circ.Nebr.agric.Coll., 1959, C-171,pp.8.
The advantages and disadvantages of chemical weed control are mentioned, and the use of mowing, reseeding and management briefly discussed. A table lists approximately 60 weeds and recommended chemical control methods. - J.W.B. [15(78.2)]

795. SWEET, R.D., RUBATZKY, V. and CIALONE, J. (Cornell Univ.,Ithaca,N.Y., U.S.A.) Comparisons of EPTC and several analogs for weed control and vegetable crop tolerance. Proc.14th NEast.Weed Control Conf., 1960, 113-22, tabs.5,bibl.14.

EPTC, propyl dipropylthiolcarbamate (1607), allyl dipropylthiolcarbamate (1862), ethyl diallylthiolcarbamate (2007), ethyl ethylbutylthiolcarbamate (2060),propyl ethylbutylthiolcarbamate (2061) and ethyl allylpropylthiolcarbamate (2181) were compared: (1) on beets, carrots, lettuce, spinach, sown and transplanted tomatoes, transplanted cabbage, sweet corn and snap beans; (2) for the control of nutgrass [Cyperus sp.]; (3) for general weed control and (4) for residual activity in the soil. The best control of annual grasses and broadleaved weeds was given by 1607; all compounds gave commercial control of nutgrass when incorporated early in the season. 2060 and 2061 were less toxic to beets, spinach, sweet corn and sown tomatoes than EPTC or 1607. The residual effects of EPTC and 1607 were such as to be of importance for crops following spring or autumn applications. - Mainly from Authors' Summary. - L.K. [O.W.]

796. DALLYN, S.L. and SAWYER, R.L. (Coll. Agric.,Cornell Univ.,Ithaca,N.Y.,U.S.A.) Results with Eptam on several vegetables. Proc.14th NEast.Weed Control Conf., 1960, 125-8, tabs.3,bibl.2.

EPTC 2, 4 and 6 ℔ was applied the day before sowing beets, snap beans, lima beans, carrots, sweet corn, cucumber, lettuce, muskmelon, onion, pea, spinach, cabbage, cauliflower, tomatoes and peppers. Cauliflowers, cabbage, tomatoes and peppers were also sown or transplanted into the treated soil at intervals up to 15 days after application. In all cases EPTC was incorporated 3-4 in. deep in the soil by double discing. Only snap beans, sweet corn, carrots and beets showed considerable tolerance and only snap beans showed no injury from the highest rate (which gave complete weed control). The bloom on cauliflower and cabbage leaves was completely absent and the plants showed formative effects. Rye sown 4 months later was severely affected by the highest rate. - L.K. [O.W.]

797. LACHMAN, W.H. and MICHELSON, L.F. (Agric.Exp.Sta.,Amherst,Mass.,U.S.A.) Weed control in certain vegetable crops. 1959 (A progress report). Proc.14th NEast. Weed Control Conf., 1960, 196-200.

Good weed control with high crop yields was given by CDEA 4 ℔ post-em. in spinach; CDEA 6 ℔ or CDEA 3 ℔ + chlorpropham 2 ℔ in lettuce one day after planting; Niagra 4512 (N-(3-chloro-4-methylphenyl)-2-methylpentanamide) 4 ℔ post-em. in tomatoes; ipazine 2 ℔, Niagra 4562 (N-(3,4-dichlorophenyl) pentanamide) 4 ℔, Stoddard solvent 100 gal/ac in carrots (only broadleaf weeds controlled; a second treatment with Niagra 4562 4 ℔ after 13 days controlled crabgrass [Digitaria spp.]). In asparagus fairly good weed control (except Digitaria) without crop damage was given by atrazine 7.5 ℔, EPTC 8 ℔ and simazine 8 ℔. Results with CDEA, CDAA and endothal in beets were promising. The following treatments damaged crops:- fenuron 3 ℔ pre-em. in beets, amiben 4 ℔ and Zytron [O-(2,4-dichlorophenyl)-O-methyl isopropylphosphoroamidothioate] 10 ℔ in lettuce, CDEA 4 ℔ + chlorpropham 1 ℔ in spinach, and chlorpropham 2 ℔ in spinach. Neither crops nor weeds were appreciably susceptible to (a) tomatoes - neburon 8 ℔, amiben 4 ℔, EPTC 4 ℔; (b) asparagus - monuron 3.2 ℔; (c) onions - chloropropham 8 ℔. Yield reductions resulting from chlorpropham 2 ℔ in lettuce were probably due to competition. Fair weed control without damage to onions was given by CDEA 6 ℔ + chlorpropham 4 ℔, and CDAA (Randox T-15) 3 gal or (Randox T-25) 5.25 gal/ac. - M.E.L. [O.W.]

798. EDWARDS, C.J. (Chesterford Park Res. Sta.,Saffron Walden,Essex,England). Simazine as a selective weedkiller. Grower, 1960, 53,(3),730-1.

Simazine 1-1.5 ℔ a.i. is recommended for the control of annual weeds in maize, sweet corn, asparagus, apples, pears, raspberries, blackcurrants, red currants, gooseberries, conifers, roses and shrubs. It is tentatively recommended at 1 ℔ for field and broad beans and tentatively recommended at 5 ℔ in apples, pears, raspberries, black currant, red currants, gooseberries, conifers and roses. It has given promising results in rhubarb, tulip, narcissi, gladioli, potatoes, strawberry, spring onions, turnips, parsnips and hops but not in French beans, runner beans, lettuce, red beet and carrots. - L.K. [O.W.]

799. NOLL, C.J. (Coll.Agric.,State Univ., Univ.Park,Penn.,U.S.A.) Chemical weeding of carrots. Proc.14th NEast.Weed Control Conf., 1960, 175-7, tabs.1.
Chantenay carrots were treated the day after sowing with Urab [fenuron-trichloroacetate] 1.5 and 2.25 #, chlorpropham 4 and 6 #, Dinoben [3-nitro-2,5-dichlorobenzoic acid] 3 and 4.5 #, CDEC 4 and 6 #, at the first true leaf stage with propazine 1 and 2 #, Niagra 4512 [N-(3-chloro-4-methylphenyl)-2-methylpentanamide] 4 and 6 #, Niagra 4556 [N-(3,4-dichlorophenyl)methacrylamide] 4 and 6 # and Niagra 4562 [N-(3,4-dichlorophenyl)-2-methylpentanamide] 4 and 6 # and before planting with EPTC (incorporated) 4 and 6 #. These treatments were compared with post-em. Stoddard Solvent 90 gal/ac. Outstanding results were given by Niagra 4512 and very good results by Niagra 4556 4 #, Niagra 4562 4 and 6 # and chlorpropham 6 #. Yields were reduced by EPTC, Urab, Dinoben, CDEC and propazine. - L.K. [O.W.]

800. TREVETT, M.F. and GARDNER, W. Annual weed control in carrots. Proc.14th NEast.Weed Control Conf., 1960, 178-87.
The yields of topped carrots (var. Danvers) following hand-weeding or treatments with Karsil (N-(3,4-dichlorophenyl)-2-methylpentanamide) 4 # at the cotyledon or the first true leaf stages were greater than yields following DAC-893 (dimethyl-2,3,5,6-tetrachloroterephthalate) 6 # at planting, EPTC 6 # pre-planting, CDEC 6 # at planting or yields from unweeded plots. The number of carrots/ 25 ft row did not significantly differ except for EPTC where the number was reduced. The (a) % annual broadleaf weed and (b) % annual grass control 8 weeks after planting was Karsil (cotyledon) (a) 97%, (b) 61%; Karsil (true leaf) (a) 98%, (b) 75%; DAC-893 (a) 83.1%, (b) 91.2%; CDEC (a) 73.5%, (b) 100%; EPTC (a) 62.4%, (b) 100%. Principal weeds were Chenopodium album, Amaranthus retroflexus, Brassica rapa, Echinochloa crus-galli, Polygonum pensylvanicum. Yields of carrots following Karsil 4 # post-em. or N-(3-chloro-4-methylphenyl)-2-methylpentanamide 4 # were greater than hand-weeded checks. All chemicals were applied in 50 gal/ac. - M.E.L. [O.W.]

801. MORAN, C.H. (Campbell Soup Co., Riverton,N.J.,U.S.A.) Progress report on weed control in processing tomatoes. Proc. 14th NEast.Weed Control Conf., 1960,102-6, tabs.5,bibl.3.
In 1959 trials no apparent injury to Campbell 146 tomatoes and no effects on colour indices,titratable acidities or pH of the purees were caused by amiben 4 #, EPTC 4 #, or Solan (N-(3-chloro-4-methylphenyl)-2-methylpentanamide) 4 # applied either 1 month after transplanting (I) or at lay-by ca. 2 months after transplanting (II), or chlorpropham 8 # at (I) and 4, 8 and 12 # at (II) or neburon 3 # at (II). All compounds were applied broadcast in granular form except Solan which was applied overall as a spray. EPTC was mixed into the soil only at (II). No attempt was made to keep herbicides off the tomato plants. Yields were reduced significantly on plots treated with CIPC and Solan (I) but this was attributed to weed competition. Chlorpropham 12 #, amiben and EPTC, applied at (II), gave almost acceptable weed control. Chlorpropham 4 and 8 # failed to control broadleaf weeds especially ragweed [Ambrosia artemisiifolia]. Solan failed to control emerging weeds, and neburon to control grasses. EPTC was ineffectual when not incorporated into the soil. - D.M.L.S. [O.W.]

802. SCHUBERT, O.E. and HARDIN, N.C. (Coll. Agric.,Morgantown,W.Virginia,U.S.A.) Evaluaof several herbicides on tomato plants. Proc.14th NEast.Weed Control Conf., 1960, 81-5.
In trials where herbicides were applied 3-6 weeks after planting 3 (named) varieties of hybrid tomatoes in a medium sandy loam, with irrigations as needed Amiben 10 G 4 # [?granular] applied to soil surface after dilution with sand gave the most promising results with satisfactory grass and broadleaved weed control for 7 weeks, and no adverse effect on tomatoes. Tomatoes were also tolerant of EPTC 5 G [?granular] 5 # diluted with sand and mixed into the soil with a rotary tiller and of Solan [N-(3-chloro-4-methylphenyl)-2-methylpentanamide] 4 # in 200 gal/ac. EPTC gave acceptable control of barnyard grass [Echinochloa crus-galli], crabgrass [Digitaria sanguinalis], redroot pigweed [Amaranthus retroflexus] and lambsquarters [Chenopodium album] but not of purslane [Portulaca oleracea]. Solan gave satisfactory control of broadleaved weeds but not of grasses. Simazine 4 G [?granular] applied to soil surface and 50 WP [? 50% wettable powder] applied in 800 gal/ac, both at 2 #, was injurious to tomatoes. - D.M.L.S. [O.W.]

803. MOORE, D.H. and DORSCHNER, K.P. (Niagra Chem.Div.,Middleport,N.Y.,U.S.A.)

Preliminary studies of Solan as a post-emergent herbicide for tomatoes. Proc. 14th NEast. Weed Control Conf., 1960, 86-101, tabs. 10, bibl. 3.

In 2 experiments Solan (N-(3-chloro-4-methylphenyl)-2-methylpentanamide) was applied to 7 varieties of tomatoes at 2, 4 and 6 # + Thiodan + COCS in 50 gal/ac. In the first experiment where the crop was treated at the 8-12 leaf stage, just after fruit set and at initial fruit ripening none of the rates significantly delayed ripening or reduced total yield though some of the treatments caused large non-significant reductions in total yield. Where the same treatments were applied to plants in heavy blossom and to plants beginning to produce ripe tomatoes there was a significant reduction in the number and weight of early ripened tomatoes but not in seasonal yield. Treatments gave good control of Amaranthus retroflexus, Chenopodium album, Ambrosia elatior and various other unspecified broadleaved weeds; control of annual grasses was not satisfactory. - Authors' Summary (modified). - L.K. [O.W.]

804. DALLYN, S.L. and SAWYER, R.L. (Coll. Agric., Cornell Univ., Ithaca, N.Y., U.S.A.) Progress report on weed control in tomatoes, peppers, carrots, onions, and cauliflower. Proc. 14th NEast. Weed Control Conf., 1960, 107-10, tabs. 4.

Tomato. When applied about 3 weeks after transplanting particularly promising results were given by EPTC (granular, incorporated) 4 lb and Niagra 4512 [N-(3-chloro-4-methylphenyl)-2-methylpentanamide] 4 lb and perhaps by simazine (granular) 1 lb; less satisfactory (but no worse than the control) were Amiben [3-amino-2,5-dichlorobenzoic acid] (granular) 4 lb, Dinoben [3-nitro-2,5-dichlorobenzoic acid] (granular) 4 lb, simazine 2 lb, EPTC 6 lb and Niagra 4512 6 lb.

Peppers. (Var. CalWonder): when applied as in tomatoes much the best results were given by Dinoben 4 lb and EPTC 4 lb. The other compounds as used in tomatoes also out-yielded the control.

Carrots. (Var. Chanteuay): Compared with the hand weeded control, yields were not significantly affected by sowing applications of Amiben (liquid or granular) 4 lb, Dinoben (granular) 4 lb, Niagra 4556 [N-(3,4-dichlorophenyl)methacrylamide] 2 or 4 lb, Niagra 4562 [N-(3,4-dichlorophenyl)-2-methylpentanamide] 2 or 4 lb, chlorpropham 4 lb (this gave much the highest yield) or by post-em. (3 weeks after sowing) application of Stoddard Solvent 75 gal, Niagra 4556 2 or 4 lb or Niagra 4562 2 or 4 lb. No compound had any appreciable effect on quality.

Onions. Lay-by treatment with EPTC 4 or 6 # (incorporated) gave complete grass control in onions (vars. Early Harvest and Sweet Spanish) without affecting yield or quality. Foliage affected by the spray was rendered more susceptible to Purple Blotch.

Cauliflower. Snowball E and Y were treated 2 weeks after transplanting. Amiben (granular) 4 lb and DAC-893 [dimethyl-2,3,5,6-tetrachloroteterephthalate] 3 and 6 lb gave moderate to good weed control with no crop injury. Promising results were also given by trietazine 1 and 2 lb, EPTC 4 lb and Amiben (liquid) 4 lb. Simazine (granular) 2 lb and higher rates of some of the others were also injurious. - L.K. [O.W.]

805. SWEET, R.D. (Dep. Veg. Crops, Cornell Univ., Ithaca, N.Y., U.S.A.) The status of weed control in red beets. Proc. 14th NEast. Weed Control Conf., 1960, 168-74, tabs. 3, bibl. 13.

Gives a partial review of published work on selective weed control in red beets using salt sprays, TCA, endothal, dalapon, monuron, chlorpropham, CDEC and EPTC.

In field and greenhouse tests EPTC or propylethyl-n-butylthiolcarbamate pre-planting gave equal weed control. Toxicity to beets and longevity in soil of EPTC was greater than propylethyl-n-butylthiolcarbamate. In field experiments on sandy loam soil no correlation was observed between beet and weed response and different formulations of CDEC 8 # pre-planting or pre-em. Pre-planting treatments severely damaged beets and enhanced weed control. In greenhouse tests injury increased with temperature. - M.E.L. [O.W.]

806. DUICH, J.H. (State Univ., Pennsylvania, U.S.A.) Pre-emergence crabgrass results in Pennsylvania - 1959. Proc. 14th NEast. Weed Control Conf., 1960, 268-70, tabs. 1.

A 3 year old stand of Kentucky bluegrass was seeded with crabgrass (Digitaria sanguinalis and D. ischaemum), fertilized, and maintained 1 in. high. Calcium arsenate, Pax [arsenates + chlordane + inert matter], lead arsenate, and chlordane were mechanically mixed with soil and applied by hand; Zytron [O-(2,4-dichlorophenyl)-O-methylisopropylphosphoramidothioate], fenac, simazine, and a coded compound (Lilly

AIT-30) were applied by sprayer at 35 p.s.i. in 90 gal water/ac; applications were made on 15th and 30th April and 18th May.

Zytron 13 # and calcium arsenate 16 lb/M [1000 ft²?] gave excellent control of crabgrass; Pax 25 lb/M and lead arsenate (90%) 24 lb/M gave fair control at the earliest date but were not so effective on the later dates; fenac 4 # gave good control, and chlordane 60 # fair control, at the latest date; simazine 1.5 # and the coded compound gave only poor to fair control; (these last 4 compounds were each more effective when applied at the latest date).

Simazine completely killed the bluegrass and fenac caused a wilted appearance for approximately 3 weeks after the application.

The plots were infected by leafspot, dollarspot and red thread diseases following the period of treatment. None of the herbicides showed evidence of disease control, although the first 2 Pax treatments contributed to greater leafspot infection due to over-stimulation of the turf from the soluble nitrogen they contain. - J.W.B.

[O.W.]

807. ENGEL, R.E. and MEGGITT, W.F. (Agric.Exp.Sta.,New Brunswick,N.J.,U.S.A.) A progress report of pre-emergence crabgrass control on lawnturf. Proc.14th NEast.Weed Control Conf., 1960, 304-7, tabs.2.

Chemical treatments were applied in March before germination of crabgrass [Digitaria spp.] to a turf which was predominantly Kentucky bluegrass, with a moderate amount of red fescue, and traces of bentgrass.

The number of crabgrass seedlings counted in July was approximately 250 on the control plots, but was <80 on plots treated with chlordane 80 #, calcium arsenate (73%) 350, 535 and 700 #, calcium arsenate (70%) 525 #, Dacthal (dimethyl-2,3,5,6-tetrachloroterephthalate) 6, 9 and 12 #, and Zytron (O-(2,4-dichlorophenyl)-O-methyl isopropylphosphoramidothioate) (on vermiculite) 20 #. Chlordane 40 # and Zytron (emulsion) 20 # gave similar counts to the control plots, and lead arsenate 871 # gave intermediate results.

Fenac and 2 coded compounds did not give appreciable crabgrass control, and fenac caused injury to the turf grasses; calcium arsenate 525 and 700 # gave 18 and 25% reduction in clipping weights of the turf grasses. - J.W.B. [O.W.]

808. GIORDANO, P.M. and DEFRANCE, J.A. (Agric.Exp.Sta.,Rhode Island,U.S.A.) Chickweed control in lawn turf with chemicals. Proc.14th NEast.Weed Control Conf., 1960, 300-3, tabs.1.

An area of established chewings fescue, Kentucky bluegrass and Astoria bentgrass in which Cerastium vulgatum was abundant and uniformly distributed was fertilized, and treated with single applications of chemicals in May. Discolouration observations were made 4 days after treatment.

(Ammonium methyl arsonate (1) + 2,4-D), ((1) + 2,4,5-TP + 2,4-D), and ((1) + 2,4,5-TP) each at 43.56 #, and 2,4,5-TP and 2,4-D on vermiculite, all gave more than 80% control of Cerastium; 2,4,5-T and N-(3,4-dichlorophenyl)-2-methyl pentanamide) 2 # gave 55 and 64.3% control respectively; results obtained for N-(3-chloro-4-methylphenyl)-2-methylpentanamide 4 # were inconsistent.

Very slight turf discolouration was caused by the 3 ammonium methyl arsonate mixtures and the 2 pentanamide compounds. - J.W.B.

[O.W.]

809. MOWER, R.G. and CORTMAN, J.F. (Cornell Univ.,N.Y.,U.S.A.) Pre-emergence and post-emergence crabgrass control. Proc.14th NEast.Weed Control Conf., 1960, 271-7, tabs. 3,bibl.1.

Treatments were applied in October and April, before crabgrass [Digitaria spp.] germinated, to a uniform turf of Kentucky bluegrass and red fescue, which was maintained at approximately 1 in. height, well fertilized and adequately irrigated.

Results for autumn and spring applications were similar for the following:- lead arsenate 800 # 91-86% control of crabgrass; calcium arsenate 480 # 90-98%; chlordane (72% emulsion) 60 # a.i. 73-83%; chlordane (granular) 60 # a.i. 72-68%; Pax (arsenical + fertilizer proprietary) 1000 # 89-83%); chlordane (vermiculite proprietary) 250 # a.i. 53-68%; and DAC-893 (dimethyl-2,3,5,6-tetrachloroterephthalate) 12 # a.i. 100-98%. None of these treatments injured the turf except DAC-893, which caused severe injury to the red fescue and Pax which caused patches of dead turf and overall browning.

Fenac 4-6 # a.i. gave 7-15% control of crabgrass when applied in the autumn and 46-73% when applied in the spring; however, all applications caused browning of the turf and some root injury.

Treatments applied only in the spring caused no turf injury and gave variable control of crabgrass, viz. Zytron (O-(2,4-dichlorophenyl)-O-methylisopropylphosphoramidothioate) (granular) 20 # a.i. 98% control, Lilly (diphenylacetonitrile) wettable powder 4 and 8 # a.i. 10 and 50% control, and granular 16 and 32 # a.i. 68% control.

The following treatments were applied to crabgrass in the 2-leaf stage and followed by 4 weekly applications:- disodium monoethyl arsonate 15.7% (1) 1.57 oz/1000 ft^2, octyl ammonium methyl arsonate 8% + dodecyl ammonium methyl arsonate 8% (2) 0.60 oz/1000 ft^2, PMA 10% (3) 0.20 oz/1000 ft^2, PMA 6.7% + 2,4-D 4.4% (4) 0.20 oz/1000 ft^2, and potassium cyanate (5) 5.0 oz/1000 ft^2. After 5 weeks (1), (2), (3) and (4) all gave >85% control of crabgrass and (5) 70% control. (3) caused moderate, and (4) severe turf discolouration; (5) caused severe discolouration after 2 weeks but plants appeared to recover in 5 weeks. - J.W.B. [O.W.]

810. RICE, E.J. and DEFRANCE, J.A. (Agric. Exp.Sta.,Rhode Island,U.S.A.) Post-emergence crabgrass control with chemicals in lawn turf. Proc.14th NEast.Weed Control Conf., 1960, 284-7, tabs.1,bibl.4.

An area of Rhode Island Colonial bentgrass which was maintained at 1 in.cut, was infested fairly uniformly with crabgrass (Digitaria ischaemum); herbicides were applied when the crabgrass was in the 3-4 leaf stage, and 12 days later. PMA (10%) 6.75 # gave 90% control of crabgrass and caused slight discolouration of turf after the first application, and gave 92% control and slightly increased discolouration after the second application. Octyl ammonium methyl arsonate (8%) + dodecyl ammonium methyl arsonate (8%) gave 54 and 73% control with 1 or 2 applications respectively at 10.89 #, and 99% after both applications at 21.78 #. Disodium methyl arsonate (44%) 7.35 and 14.43 # and disodium methyl arsonate hexahydrate (2.5%) 9.8 and 19.6 # all gave >91% control after each application and only caused very slight turf discolouration. N-butyl-2-propoxybenzoate gave no control at 8.17 or 16.34 #; slight discolouration which occurred in one case may have been caused by the high temperature. N-butyl-2-propoxybenzoate 8.17 # + disodium methyl arsonate (12.5%) 2.72 # gave no control with 1 or 2 applications; at double the rate of each compound there was 6% control after 1 application and 64% after the second; slight discolouration again may have been caused by high temperature. - J.W.B. [O.W.]

811. SANTELMANN, P.W. and MEADE, J.A. (Agric.Exp.Sta.,Maryland,U.S.A.) Pre-emergence crabgrass control in lawns. Proc.14th NEast. Weed Control Conf., 1960, 288-91, tabs.2.

A well established Kentucky bluegrass lawn was treated with chemicals before crabgrass emergence [Digitaria spp.] in the spring and autumn 1958, and the spring of 1959. In general, chlordane (10% granular) 70 # gave better crabgrass control than chlordane (72% emulsifiable concentrate); spring treatment appeared better than autumn treatment when granular chlordane was used, but not with the emulsifiable concentrate. Fenac 4 and 6 # gave 38% control when applied in the spring but resulted in slight turf injury. Pax (arsenic + nitrogen + chlordane) 1080 # gave approximately 80% control but caused severe turf injury. DAC-893 (dimethyl-2,3,5,6-tetrachloroterephthalate) 5 and 10 #, and Zytron (O-2,4-dichlorophenyl-O-methylisopropylphosphoramidothioate) (granular and emulsion) 15 and 20 # gave good crabgrass control (liquid Zytron being slightly more effective than granular) and caused no turf injury.

In an experiment in which Kentucky bluegrass and ryegrass were seeded either 2-3 weeks before or after chemical application, or on the same day, fenac was found to be toxic to bluegrass whether applied before or after seeding. Ryegrass was more resistant to chlordane and fenac than bluegrass. When seeded before chlordane application, the grasses were not killed by granular formulation but bluegrass was partially injured by the liquid formulation. When chlordane was applied before the seeding, most of the bluegrass was killed but ryegrass results were inconsistent. Applying the chemicals the same day as seeding gave the same results as applying them before seeding. - J.W.B. [O.W.]

812. SCHMIDT, R.E. and CHAPPELL, W.E. (Agric.Exp.Sta.,Blacksburg,Virginia,U.S.A.) Crabgrass control studies in turf. Proc. 14th NEast.Weed Control Conf., 1960, 278-83, tabs.4.

An established turf consisting of Kentucky bluegrass and creeping red fescue was maintained at 1.25 in. height and treated during the autumn and winter of 1958 and the spring of 1959 with several chemicals, in each case before the emergence of crabgrass [Digitaria spp.]. Fenac 3, 6 and 9 #, neburon 4, 6 and 8 #, and chlordane 30, 60 and 90 # were each applied in all 3 seasons; only fenac caused any appreciable reduction in turf density and this had disappeared by September 1959. None of the treatments gave very good crabgrass control; the best being 50-60% by neburon 6 # applied in the spring.

In a second experiment, the following treatments were applied only in the spring of 1959:- diphenylacetonitrile (1) 4, 8, 12 and 16 #; (p-chlorophenyl)phenylaceto-

nitrile (2) 4, 8, 12 and 16 #; O-2,4-dichlorophenyl-O-methyl isopropylphosphoramdiothioate (3) 5, 10, 15 and 20 #; calcium arsenate (granular) (4) 215, 430, 645 and 860 #; 2,3,5,6-tetrachloroterephthalate (5) 3, 6, 9 and 12 #; chlordane (6) 50, 60, 70 and 80 #; neburon (7) 2, 4, 6 and 8 #; potassium gibberellate (8) 5, 10, 15 and 20 g/ac; and urea-formaldehyde (38% N granular) (9) 174, 261, 358, and 522 #. These treatments all caused an immediate reduction in turf density but in no case was this a lasting effect. Crabgrass control was excellent with (3) 20 #, (4) 645 and 860 #, (5) 12 #; and good with (3) 5, 10 and 15 #, (4) 215 and 430 # and (5) 9 #. - J.W.B. [O.W.]

813. PRIDHAM, A.M.S. (Cornell Univ.,N.Y., U.S.A.) Crop, weed and soil aspects of simazine, atrazine and other herbicides in greenhouse and field tests. Proc.14th NEast.Weed Control Conf., 1960, 142-7, tabs.3.

Timothy (Phleum pratense) was virtually eliminated by liquid and granular atrazine 5 and 10 #, by liquid simazine 5 and 10 #, and by the granular formulation when the plots were rototilled after treatment. The removal of timothy and other grasses allowed better growth of dandelion (Taraxacum officinale) and bindweed (Convolvulus sepium); liquid atrazine and simazine were more effective in reducing dandelion than the granular, and in all cases but one, reduced them to below the control level. Neither chemical reduced the bindweed. Foxtail (Setaria lutescens) and ragweed (Ambrosia artemisiifolia) were controlled by both chemicals, but granular atrazine and liquid simazine appeared to be more effective; counts indicated residual action for at least one season.

Bareroot liners and weeds were planted into "Market pak" paper containers with a uniform amount of soil-simazine mixtures; soil moisture was maintained approximately at field capacity. Gladiolus were killed by simazine 3 # a.i. 2 months after treatment; Taxus cuspidata showed 12% mortality at 8 #, 75% at 32 #, and T. occidentalis 50% at 2 #, and 100% at 8 #; Forsythia intermedia showed 25% discolouration at 2 # and 100% at 32 #; Euonymus fortunei, Iberis sempervirens, Pachysandra terminalis and Vinca minor showed varying degrees of discolouration, but regained colour when fertilized throughout the summer; Chrysanthemum weed was completely killed by 2 #; Artemisia vulgaris showed fluctuations of 6-50% mortality, which did not appear to be governed by the rate applied; Digitaria ischaemum was killed by 8 #; Azalea showed 75-100% mortality from granular simazine, and 25-75% when wettable powder was applied - (both formulations at 1, 2, and 4 # a.i.).

Germination and growth of rye and buckwheat was satisfactory in the field when simazine $\leq$12 # a.i. was incorporated into the soil. Effect of weather and rototilling over a period of 2 years was sufficient to dissipate the simazine so that growth of oats, rye, wheat and buckwheat was comparable to that in untreated control plots. In greenhouse tests, rye was the only grain to grow in the soil-simazine mixtures. All test crops grew in soil-atrazine mixtures where atrazine was $<$4 # a.i. - J.W.B. [O.W.]

814. AHRENS, J.F. (Agric.Exp.Sta.,Windsor, Conn.,U.S.A.) Chemical control of weeds in Taxus liners. Proc.14th NEast.Weed Control Conf., 1960, 155-60.

Three varieties of 2 year old Taxus liners were transplanted into field plots in April, each plot containing 2 rows of 3 T. Browni [T. cuspidata var. Brownii], 3 T. Capitata [T. cuspidata], and 3 T. Hatfield [T. cuspidata var. Hatfieldii]. In the pre- and post-planting treatments the broadleaf weeds present were mainly Polygonum pensylvanicum and Chenopodium album, and the grasses mainly Setaria lutescens and Digitaria spp., but distribution was erratic.

Six days before planting out herbicide treatments were applied to moist soil,EPTC and CDEC incorporated into the soil, and simazine 3 # as a spray, or as a granular formulation at 6 #. % Control of the broadleaf weeds was as follows:- EPTC 4 and 8 #, 76 and 35% (poor weed distribution in the latter case suggested as the reason); CDEC 6 and 12 #, 16 and 68%; and simazine 3 and 6 #, 99 and 53%. % Control of the grasses:- EPTC 4 and 8 #, 96%; CDEC 6 and 12 #, 83 and 92%, and simazine 3 and 6 #, 97 and 76%. The unsatisfactory results with EPTC and CDEC may have been influenced by the exceptionally dry period throughout the experiment; this may also have made the simazine spray more effective than the granular application. T. Browni liners in plots where simazine 6 # and EPTC 8 # had been applied showed very slight injury in July, but growth was not significantly affected by any treatment; however, T. Capitata and T. Hatfield in EPTC 8 # plots showed slight injury in July and produced significantly less growth than the control plants.

Post-planting treatments were applied 6 days after transplanting; EPTC and CDEC applied before and the other herbicides after cultivation, and all applied as granular formulations

except 2,4-DES. EPTC 4 and 8 ℔, simazine 6 ℔, and chlorpropham 8 and 12 ℔ gave good control of the broadleaved weeds and grasses; and dinoseb 5 and 10 ℔ good control of the broadleaved weeds only. Fair control of all weeds was given by 2,4-DES 3 and 6 ℔, Falone [3Y9] 3 ℔, NPA 6 ℔, and CDEC 12 ℔. One month after weed harvest, good residual control of grasses was obtained with simazine 6 ℔, chlorpropham 8 and 12 ℔, and EPTC 8 ℔. Simazine 6 ℔ prevented germination of oats seeded in the plots in September. Slight injury to Taxus was observed in July in 3 cases - EPTC 8 ℔ in T. Browni, and simazine 6 ℔ and Falone 6 ℔ in T. Capitata. In some cases, growth of treated yews, especially T. Browni, was considerably greater than those in the weedy control plots. Neburon 6 ℔ depressed growth slightly in T. Capitata and T. Hatfield, but not in T. Browni. - J.W.B. [O.W.]

815. HARRISON, M.R., MEGGITT, W.F. and DUPRAS, C.A. (State Univ.,New Brunswick,N.J., U.S.A.) Control of annual weeds in azaleas with granular herbicides. Proc.14th NEast. Weed Control Conf., 1960, 161-4, tabs.1.

Eight series of plots were established at 2 locations in northern and southern New Jersey. Granular applications on attaclay, of EPTC and dinoseb 5 ℔, chlorpropham 8 ℔, and CDEC 6 ℔, were applied to 7 azalea varieties. No weeds were visible at time of application, but later crabgrass [Digitaria spp.], lambsquarter [Chenopodium album], ragweed [Ambrosia artemisiifolia], purslane [Portulaca oleracea] and pigweed [Amaranthus sp.] were noticed on the controls. One series of plots (var. Hexe) was treated with chloropropham 2, 4 and 6 ℔ for chickweed [Stellaria media] control. Results were evaluated 4 to 5 weeks after treatment. Chlorpropham and dinoseb gave good weed control for 5 to 6 weeks in all plots; CDEC and EPTC gave poorer control. After 6 weeks, weeds were fewer, but grew to a greater height, thus reducing the time taken for hand weeding from 16 man hours for the control to 1.5.

The only injury to azaleas observed was a slight chlorosis to var. Hinodegiri when treated with EPTC; and in addition, these plants appeared to develop a deep root system with very few surface roots compared to control plants.

Chlorpropham 4 ℔ applied in October gave good chickweed control the following spring.

Until more information is available only 1 treatment of dinoseb and chlorpropham per year is recommended. - J.W.B. [O.W.]

816. BING, A. (Cornell Ornamentals Lab.,Farmingdale,Long Island,N.Y.,U.S.A.) Observations on weed control experiments in nursery and cut flower crops during 1959. Proc.14th NEast.Weed Control Conf., 1960, 137-41, tabs.2,bibl.5.

Simazine (wettable powder) caused injury to mock orange at 2 ℔, to privet at 4 ℔, and to Enkianthus at 6 ℔. Granular simazine injured aster, carnation and chrysanthemum at 2 ℔, Taxus capitata at 3 ℔, and azalea and mock orange at 6 ℔. 6 ℔ granular controlled red root [Ceanothus americanus] and lambsquarter [Chenopodium album], but rates up to 10 ℔ gave no control of nutgrass [Cyperus esculentus], bindweed [Convolvulus arvensis?] or chrysanthemum weed.

Diuron 80% wettable powder injured boxleafed holly at 2 ℔, andromeda, hemlock, mock orange and Rhododendron catawbiense at 3 ℔, and Enkianthus and Taxus media Hicksii at 4 ℔. Granular diuron injured Enkianthus and mock orange at 2 ℔, Taxus capitata at 3 ℔ and boxleafed holly at 5 ℔. Nutgrass was damaged by higher rates, but none of the rates applied controlled crabgrass [Digitaria spp.]

EPTC granular injured gladiolus at 3 ℔, and mock orange at 6 ℔. Good control of nutgrass was obtained, but red root and lambsquarter were not controlled by 3 ℔.

Atrazine (granular) injured gladiolus and mock orange at 2 ℔, and privet at 6 ℔. 4 ℔ controlled nutgrass and gave limited control of red root, but no control of crabgrass.

Chlorpropham injured Taxus capitata at 16 ℔. Granular chlorpropham injured privet at 4 ℔, and azalea at 8 ℔. Spring applications were very effective against seedling grasses and chickweed [Stellaria media], and later applications against purslane [Portulaca oleracea]. No control of Galinsoga or henbit [Lamium amplexicaule] was given.

Neburon (granular) caused no injury to the ornamental species treated, but economically it does not compare favourably with diuron for weed control. - J.W.B. [O.W.]

817. BING, A. (Cornell Ornamentals Res. Lab.,Farmingdale,Long Island,N.Y.,U.S.A.) A comparison of some herbicides on flowering and corm yield of gladiolus variety Friendship. Proc.14th NEast.Weed Control Conf., 1960, 148-54, tabs.4,bibl.2.

Gladiolus corms planted in June were treated 7 days later, and weed growth evaluated in

October. Atrazine (granular) 2, 3 and 4 #, diuron (liquid and granular) 1.5, 2 and 3 #, dinoseb liquid 4, 8 and 12 #, and simazine (liquid and granular) 2, 3 and 4 # all gave very good general weed control up to the time of flowering; however, the lower rates only gave fair control of crabgrass [Digitaria spp.], excepting liquid diuron which gave good control.

Cut flower yield reductions were significant for all atrazine treatments, most liquid simazine treatments, and granular simazine at the higher rates; diuron caused some significant reductions, but also caused increases in some cases; dinoseb 4 and 8 # showed similar yields to the control and in some cases an increase, and at 12 # it caused a significant delay in flowering and yield reduction from No. 6 but not from No. 5 corms

There were extreme reductions in cut flower yield from the unweeded plots.

No. 6 corm yield and weight was significantly reduced by all rates of atrazine, and the weight reduced by liquid dinoseb 12 #, and liquid simazine 4 #; granular diuron 1.5 #, liquid diuron 2 and 3 #, and liquid dinoseb 8 # all significantly increased the corm yield, and liquid dinoseb 4 # increased their weight; cormel yield was significantly reduced by all rates of atrazine, granular diuron 1.5 #, liquid diuron 2 and 3 # and liquid simazine 3 and 4 #.

No. 5 corm yield and weight was significantly reduced by atrazine 3 and 4 #, yield by liquid simazine 4 #, and weight by granular diuron 1.5 #; only liquid dinoseb 4 # significantly increased corm weight; cormel yield was significantly reduced by all rates of atrazine, granular diuron 2 #, and all rates of liquid diuron and simazine. J.W.B. [O.W.]

818. MEADOWS, M.W., SHAULIS, N. and FLAGG, C.V. (G.L.F., Ithaca, N.Y., U.S.A.) Bindweed control in Concord grapes 1957-9. Proc. 14th NEast. Weed Control Conf., 1960, 71-6, tabs.5, bibl.2.

The following results were obtained from trials over 3 years in mature Concord grapes: (1) 2,4-D (amine and acid) 3 # applied in July caused leaf malformation both in the sprayed area and from drift at up to 150 ft distance; with the acid, volatility also caused damage at 50 ft distance; (2) Diax [2,4-D isopropylamine 93% citric acid 7%] applied for 3 consecutive years in August or September at 1 and 2 # gave excellent control of Convolvulus sepium without affecting yields or soluble solids of grapes; (3) rates of 2 # and over of TBA were too injurious for use in grapes; (4) TBA 0.2-0.8 # applied in late August when berries were nearly full grown caused practically no leaf malformation whereas July application (when berries were small and shoot growth rapid) caused considerable injury; however, direct application in late August on a few leaves caused berries on that shoot to fail to ripen; 0.2 and 0.4 # applied in late August failed to control C. sepium, but 0.8 and 1 # gave excellent control without affecting grape yields, berry size or soluble solids; (5) late August applications of TBA 0.7 # to the same plot for 3 consecutive years gave almost complete control of C. sepium without adverse affect on grape yields and 0.35 # gave considerable control. Best control of C. sepium was obtained when entire plant was sprayed. TBA resulted in little to no damage to adjacent vines. - D.M.L.S. [O.W.]

819. PATEK, J. and BLAHA, J. Prispevek k poznani vyvojove dynamiky vinicnich plevelu. [A contribution to the knowledge of the development of weeds in vineyards.] Ceskoslov. Akad. Zemedel. Ved. Sborn. Rostlinna Vyroba, 1959, 32, (3), 437-46, (Czechoslovakian.f.russ.g.)

Examples of typical vineyard weed floras and seasonal changes in their composition are recorded. Cultivation alone can eradicate only a few weed species, but frequent shallow cultivation combined with the use of herbicides such as monuron and simazine shows promise. - Hort. Abstr., 30, 546.

820. SHAULIS, N. and CROWE, D. (Agric. Exp. Sta., Geneva, N.Y., U.S.A.) New York trials in weed control over the whole vineyard floor. Proc. 14th NEast. Weed Control Conf., 1960, 66-70, tabs.4, bibl.3.

Experiments in Concord grapes 4, 10 and 50 years old indicated that April applications of monuron or diuron 4 # will give adequate season-long weed control and could be an acceptable substitute for between row tillage. Diuron caused no chlorosis; monuron caused some chlorosis in 1 trial but yield and vigour were not apparently affected. - D.M.L.S. [O.W.]

821. BAILEY, J.S. (Univ., Amherst, Mass., U.S.A.) Weed control in cultivated blueberries with diuron. Proc. 14th NEast. Weed Control Conf., 1960, 49-54, tabs.8.

Diuron at ca. 3 # in spring or autumn gave good weed control in blueberries and

appears to be safe in the varieties Berkeley, Bluecrop, Blueray, Burlington, Earliblue, Herbert, Jersey and Stanley. The following varieties appeared to be more sensitive: Atlantic, Concord, Coville, Ivanhoe and Rancocas. The most resistant varieties tolerated much higher rates. There was some indication that young plants may be more resistant than old. - L.K. [O.W.]

822. TREVETT, M.F. (Agric.Exp.Sta.,Orono, Maine,U.S.A.) Control of sweet fern and poplar in lowbush blueberries by contact application of 2,4-D and 2,4,5-T. Proc.14th NEast. Weed Control Conf., 1960, 221-6, tabs.2, bibl.2.

The contact applicator used consisted of flannel blanketing tacked over a wooden frame 8 ft long and 3 ft wide. This was wet with the solution and carried by 2 men walking abreast who swung it forward and backward, low enough to contact most weeds and high enough to miss most blueberry bushes. As with spray treatments, early season application (June) are more effective than late (August or September) for control of Comptonia peregrina, Populus tremuloides and P. grandidentata. To reduce injury, carriers more viscous than either water or No. 2 fuel oil are needed to limit drip and spatter. If phytotoxic oils are used, stem coverage is essential. The higher the concentration or the greater the portion of weeds wet with a given concentration, or both, the higher the % control obtained. A 1:1 mixture of 2,4-D and 2,4,5-T esters in 100 gal SAE No. 40 motor oil applied to C. peregrina in September gave a top kill the following June of 35, 45 and 75% respectively. 2,4-D (esters) in SAE No. 40 motor oil applied to Populus spp. in mid-June gave a satisfactory root kill. Minimum spattering occurred with the motor oil compared with oil and water. - D.M.L.S. [O.W.]

823. CHAPPELL, W.E. and WILLIAMS, G. (Agric.Exp.Sta.,Blacksburg,Va,U.S.A.) Weed control studies in young apple orchards. Proc.14th NEast.Weed Control Conf., 1960, 217-8.

From results after 1 year no observable injury was caused to first year apple trees by applications after planting and discing of simazine granular 3 #, simazine spray 3 # + amitrol 1 # or + dalapon 5 and 10 #, diuron granular 2 #, amitrol 8 #, and amitrol 5 # + dalapon 10 # or to 3 year old trees by applications after discing of amitrol 4 # + dalapon 5 #, amitrol 5 # + dalapon 10 #, 1-chloro-N'-(3,4-dichlorophenyl)-N,N-dimethyl formenmicine [sic] 8 # in 60 gal fuel oil/ac, and Dow General (dinoseb 55%) 1.5 pints in 5 gal oil + 45 gal water/ac + amitrol 1 #, and amitrol 2.8 # + simazine 7.4 #. - D.M.L.S. [O.W.]

824. RAHN, E.M. and FIELDHOUSE, D.J. (Univ.School Agric.,Newark,Del.,U.S.A.) Evaluation of several herbicides for strawberries. Proc.14th NEast.Weed Control Conf., 1960, 55-9, tabs.3,bibl.7.

In trials with var. Pocahontas, neburon granular 4 # and EPTC granular 5 # applied to the surface of newly cultivated soil were outstanding for the degree and duration of weed control and lack of crop injury. EPTC gave excellent control of Cyperus esculentus. Neburon gave no control of C. esculentus but better control of annual weeds than EPTC. Though 3 applications of neburon were made, 2 would probably have sufficed for full season weed control. The following were inferior: CDEC spray and granular 6 #, CDAA granular 6 #, trietazine spray 1, 2 and 4 #, dinoseb granular 9 #, 3Y9 granular 4 #, and Dinoben [2,5-dichloro-3-nitrobenzoic acid] spray 1, 2 and 4 #. Neburon 4 # as an overall spray caused injury and neburon 8 # granular and simazine 1.5 and 3 # granular reduced yields. - D.M.L.S. [O.W.]

825. AHRENS, J.F. (Agric.Exp.Sta., Windsor,Conn.,U.S.A.) Combinations of herbicides for weed control in maple tree nurseries. Proc.14th NEast.Weed Control Conf., 1960, 131-6, tabs.4.

Crimson King maples of approximately 1 in. d.b.h. were treated in May with several herbicides. Applications were made (I) before the weeds germinated, and (II) when the weeds, which consisted mainly of Chenopodium album, Stellaria media, Amaranthus retroflexus and Senecio vulgaris were 2-6 in. high.

I. Simazine 4 and 8 # and diuron 4 # gave 100% control of all weeds for 17 weeks; diuron 2 # was not quite so effective on Chenopodium album and Amaranthus retroflexus for this period; dinoseb 6 and 12 # and EPTC 4 and 8 # gave good control for 6 weeks. None of the treatments caused injury to the maples or adversely affected their growth.

II. Combining dalapon 4 # or amitrol 3 # with dinoseb 6 #, simazine 4 # or diuron 2 #, amitrol 3 and 6 # alone, and EPTC 4 # + amitrol 3 # resulted in 98-100% control of existing weeds after 4 weeks;

dalapon 4 and 8 # alone and EPTC 4 # + dalapon 4 # gave 53, 52 and 57% control respectively; however, EPTC + amitrol and dalapon alone resulted in stunting but not killing the broadleaf weeds. After 17 weeks simazine + amitrol and + dalapon were the only treatments still giving 100% control of all weeds; diuron + amitrol, and + dalapon, and EPTC + amitrol gave 33, 36 and 26% control respectively after 17 weeks. Injury to the maples was caused by dalapon 8 # and dalapon 4 # + simazine, or + diuron; however, the apparent visual injury caused by the 2 mixtures did not lead to adverse effects on growth for the season. - J.W.B. [O.W.]

826. RUNGE, G.F. (Dep.Hort.,State Univ.,East Lansing,Michigan,U.S.A.) Nursery weed control. Proc.14th NEast. Weed Control Conf., 1960, 165-7.

Simazine 4, 6 and 8 # applied in November, December, April and June, to the following nursery stock established on clean cultivated soil, had caused no apparent injury by the following September:- Berberis julianae, Buxus sempervirens, Chamaecyparis juniperoides, Enkianthus campanulatus, Ilex crenata convexa, Juniperus chinensis, J. chinensis pfitzeriana, Leucothoe catesbaei, Mahonia aquifolium, Paeonia sp., Picea abies, P. pungens, Pieris japonica, Pinus mugo mughus, Rosa sp., Taxus baccata repandens, T. cuspidata (capitata), T. cuspidata expansa, T. media 'Browni', T. media 'Flushing', T. media 'Hatfieldi', T. media 'Hicksi', T. media 'Kelsey', T. media 'Stricta', Thuja occidental globosa, and Tsuga canadensis. Simazine applied during winter gave better weed control than spring or summer applications. All rates tested controlled Linaria vulgaris, Mollugo verticillata, Stellaria media, Polygonum aviculare, Rumex crispus, Setaria lutescens, Galinsoga parviflora, Senecio vulgaris, Scleranthus annuus, Polygonum persicaria, Cerastium vulgatum, Chenopodium album, Ambrosia artemisiifolia and Euphorbia supina; Portulaca oleracea was only controlled by 6 or 8 #; Convolvulus arvensis, Artemisia vulgaris and Cyperus esculentus were not controlled by 2 and 4 #. Neburon (granular) 2, 4, 5 and 8 # applied to the same nursery species as simazine caused no apparent injury but weed control was only poor to fair even at 8 #.

Diuron (granular) 2 # applied in early June caused no injury to Tsuga canadensis, Taxus cuspidata densiforma, T. media 'Hicksi', and Juniperus horizontalis wiltoni, and gave 85-90% weed control including control of Portulaca oleracea; however, newly planted Taxus spp. liners showed slight chlorotic symptoms after diuron treatment.

Amitrol 8 # applied to Azalea mollis and chrysanthemum weed (Artemisia vulgaris) 4-6 in. high, did not injure the azaleas and gave 95-100% control of Artemisia vulgaris and Allium vineale.

Atrazine (granular) 4 # applied in June did not injure Tsuga canadensis, Taxus media 'Robusta' or Leucothoe catesbaei, and gave 80-90% weed control (including Portulaca oleracea) up to September. - J.W.B. [O.W.]

BIOLOGY OF WEEDS AND POISONING BY WEEDS

827. FURRER, A.H. and FERTIG, S.N. (Cornell Univ.,Ithaca,N.Y.,U.S.A.) Life history studies of horse nettle (Solanum carolinense). Proc. 14th NEast.Weed Control Conf., 1960, 336-42, tabs.6.

Seed sown 0.5-2 in. deep had an emergence of 53-62%, that sown 3 in. deep 38%, that sown 0.25 or 4 in. deep 20-21%, while seed from 6 or 8 in. did not emerge. Emergence from a gravelly silt loam of pH 5.6 was slightly poorer than from a well drained silt loam of pH 6.8 and both were much better than from a poorly drained silt loam of pH 6.5. Germination was best at an alternating temperature of 20-30°C reaching ca. 70% after ca. 40 days; pre-treatment with cold or fluctuations of 10-30°C were no better. Potassium nitrate only promoted germination when the seed was kept at a constant temperature of 20°C. Light or dark appeared to be without effect. Sections of roots taken from depths down to 112 cm all emerged. Root cuttings of 10 cm in length did not give rise to new plants; all cuttings of 20 cm and over were equally viable and so also were those of 2-8 mm in diameter. 15 cm cuttings planted at depths of 3, 6 and 12 and 18 in. showed complete emergence after 23, 32 and 42 days for the shallower plantings and 66% emergence after 67 days for the deepest planting. Cuttings 3-5 mm in diameter left on the soil surface at 85°F for 3 days or longer were killed. - L.K. [O.W.]

828. MORRILL, G.W. (Dir.Occup.Health, Dep.Health,New Hampshire,U.S.A.) New Hampshire ragweed control. Proc.14th NEast.Weed Control

Conf., 1960, 430-4, tabs. 1.
With reference to pollen counts and control of Ambrosia spp. - L.K. [O.W.]

829. MANERI, C.S. (Dep.Health,Albany,N.Y., U.S.A.) Ragweed pollen sampling in New York State. Proc.14th NEast.Weed Control Conf., 1960, 445. [O.W.]

830. GILBERT, D.E. (State Univ.Sci.Technol., Iowa,U.S.A.) The effect of light, moisture, and inter-species competition upon the establishment of alfalfa, ladino clover, and birdsfoot trefoil. Diss.Mic. 59-5667, pp.116, $2.50.
An investigation was conducted on well fertilized Colo Silt loam during a hot dry season, 1956, and a season of normal temperatures and above average rainfall, 1957, to determine the effect of the companion crop, weeds, and irrigation. While the effect of the companion crop and weeds, grown separately, reduced legume stands, the effect was not additive when the companion crop and weeds were grown together. The companion crop reduced weed dry matter production by 57% in the dry season and 72% during the season of above normal rainfall. Lucerne and birdsfoot trefoil stands and dry matter production were lower in 1958 where inter-species competition existed in 1957. With ladino clover, the stoloniferous growth habit compensated for the adverse effects of inter-species competition during establishment. Weeds, as a source of inter-species competition, had no carry-over effect in the first harvest season with all legumes. Irrigation increased weed growth only during the dry season and legume dry matter production only in the absence of all inter-species competition. Grain and straw and chaff yields were not affected by either irrigation or weeds. An irrigation by weeds interaction reduced grain yields in both seasons and straw and chaff yield during the dry season. Weeds caused no significant change in seed weight in either season.
Lucerne appeared to be the most tolerant to inter-species competition and to adverse growing conditions and birdsfoot trefoil the least tolerant. - From Diss.Abstr., 20,(7),2471. - D.M.L.S.

831. PIERCE, W.R.(Univ.,Wash.,U.S.A.) Dwarf mistletoe and its effect upon the growth of larch and Douglas fir in Western Montana. Diss., Mic.59-3472, pp.158, $2.50.
The following 5 species, all restricted to coniferous hosts, have been recognized in N. America: Arceuthobium pusillum, A. americanum, A. douglasii, A. vaginatum, and A. campylopodum. Infection results in a reduction of growth rate, poorer form, grain distortion, larger knots and higher mortality of hosts. In addition, the size of the viable seed crop is reduced and infected seedlings are usually unable to reach merchantable size. Merchantable size larch and Douglas fir with less than 33% of their crown infected will have their rate of basal area growth reduced by about 14% and that of those with over 60% of their crown infected may be reduced as much as 68%. In those stands now infected, control of the parasite is essential before timber production can become economic. - From Diss.Abstr., 20,(7),2468. - D.M.L.S.

832. RAVEN, E.H., SOLBRIG, O.T., KYHOS, D.W. and SNOW, R. (Univ.,Los Angeles, Calif.,U.S.A.) Chromosome numbers in Compositae. I. Astereae. Amer.J.Bot., 1960, 47,(2),124-32, figs.16,tabs.1, bibl.34.
Gives drawings and counts of chromosome numbers of numerous spp. including: Baccharis pilularis (n = 9), Chrysothamnus nauseosus (n = 9), C. viscidiflorus (n = 9), Grindelia squarrosa (n = 6), Haplopappus arborescens (n = 9), Heterotheca grandiflora (n = 9), Solidago canadensis (n = 9 or 27). - L.K. [O.W.]

833. BUNDY, O.M., DONNALLEY, W.F. and RAHN, E.M. (Agric.Exp.Sta.,Newark,Delaware, U.S.A.) Growth and development of northern nutgrass as affected by certain environmental conditions. (Abstract). Proc.14th NEast.Weed Control Conf., 1960, 44.
In general, overall plant growth and development of vegetative shoots of Cyperus esculentus was promoted by increasing: the photoperiod, light intensity, soil temperature, and soil moisture. Development of tubers was promoted by decreasing the photoperiod, especially under reduced light intensity. Germination was greatly affected by depth of planting, by soil compaction, and by dormancy. Tubers germinated readily at 3-6 in. depth. Germination was very low below 6 in. and also in highly compacted soils. Newly formed tubers germinated as low as 4%, but when stored at 48°F for 30 days the % was 95%: this shows the necessity of a rest period. This rest period was partially broken by dipping tubers moment-

arily in solutions containing thiourea (5%) or ethylene chlorohydrin (1%). MPTC prevented germination of tubers without killing them. Atrazine did not prevent germination but killed the young plants. Tubers buried in the soil for 12 months at varying depths failed to germinate. Tubers placed on top of the soil in the field in October germinated 12% in April even though temperatures dropped as low as 3°F. Tubers placed at constant temperatures of 0°F, 5°F and 20°F remained viable for 3 days or less. - D.M.L.S. [O.W.]

834. COLE, S.H. Where there is bracken there is gold. Fmrs' Weekly, 1960, 52, (13), vii, figs.2.
With reference to the causes of the spread of bracken [Pteridium aquilinum] in Britain during the past 50 years. The control of the sheep maggot fly by DDT has made the destruction of bracken less important to shepherds as before its discovery affected sheep used to hide in the bracken. Bracken is said to harbour the 'red-water' tick of cattle and other pests and thus make cattle owners reluctant to allow their stock access to it. In parts of the country it is still used as bedding and when harvested in early July it is occasionally used as hay. - L.K. [O.W.]

835. LINDNER, H. (Inst.landw.Vers.-u. Untersuchungswesen, Jena, E.Germany). Eine einfache und sichere Methode zur serienmässigen Unterscheidung der Spelzfruchte von Festuca rubra L. und Festuca ovina L. [A simple and certain serial method for distinguishing between the caryopses of Festuca rubra and F. ovina.] Z.landw.Vers-u.UntersuchWes., 1958, 4, (5), 411-16, (G.russ.e.), bibl.13.
The fluorescence produced by the seedling radicles of F. rubra and F. ovina, in the presence of NH_3 vapour, as observed under a quartz lamp, provided a rapid and reliable means for distinguishing between these 2 species. F. rubra produced an intense yellow and F. ovina a greenish fluorescence. The method could be used for serial analyses. - Herb.Abstr., 30, 199.

836. BERNHARD, R.A. (Univ., Davis, Calif., U.S.A.) Certain desert plants wage chemical warfare against competing plants. Calif. Agric., 1960, 14, (2), 4.
Thamnosma montana and other plants excrete coumarin-like substances which are toxic to other plants. - L.K. [O.W.]

837. LEFEVRE, C.W. and CLAGETT, C.O. (State Univ., Univ.Park, Penn., U.S.A.) Concentration of a growth inhibitor from Agropyron repens (Quackgrass). Proc.14th NEast.Weed Control Conf., 1960, 353-6, tabs.3, bibl.7.
A growth inhibitor extracted from dried quackgrass rhizomes was concentrated by use of paper chromotographic and ion-exchange column techniques. It was found to be anionic in nature, soluble in polar, insoluble in non-polar solvents, and unstable in strong acids and bases. Although no structure is suggested, solubility, absorption, and stability data differentiate it from the coumarin type of inhibition reported by Misera and Patnaik. - From Authors' Summary. - D.M.L.S. [O.W.]

838. ALEX, J.F. (State Coll., Wash., U.S.A.) Some aspects of the ecological life history of Linaria dalmatica. Diss.Mic.59-5447, pp.183, $2.50.
L. dalmatica, a native of S.E. Europe, has become a serious weed in Spokane County, Washington. Descriptions from 16 European and N. American floras of L. dalmatica and the segregated taxa - L. macedonica, L. grandiflora, L. dalmatica var. macedonica and L. dalmatica var. grandiflora - were compared with the wide morphological variation observed among 24 off-spring of 1 maternal parent. The comparison indicated that the segregated taxa may not be distinct from L. dalmatica. Apparently no type specimen of L. dalmatica (L.) Mill. is in existence.
Cyclic alterations of 10 days stratification at 2°C and 10 days drying at room temperature for 2 cycles induced a much higher % germination than did any other factor or combination of factors tested. Meteorological data which preceded a flush of emergence from seed planted in fine sandy loam soil in a nursery indicated that the seeds may have been exposed to cyclic alternations of cold moist, and warm dry, periods.
Seedlings from which cotyledons and epicotyl were removed when 10 days old recovered by the development of adventitious buds from the base of the hypocotyl and reached apparent maturity the same season. The highest % emergence from seeds planted at different depths in 5 soil textures was from a depth of 1.27 cm in loamy sand. Emergence from seed planted on the surface occurred only in fine sandy loam. No seedlings emerged from seeds planted at various depths in either fine or coarse sand.
Roots of seedlings penetrated downward ca. 1 cm/day during the first 31 days in fine sandy loam. Thereafter the rate was slower

but roots reached a depth of 56 cm after 105 days. The total length of all roots of one 105-day old plant grown in fine sandy loam exceeded 27 480 cm.

Adventitious stem buds were present on the primary axis after 22 days of age, and on the second and third order branch roots at 105 days of age. Stem buds on branch roots were mostly more than 16 cm distant from the primary axis and at depths of from 2 cm to more than 10 cm below the ground surface. One or more adventitious branches usually arise from the crown of young plants and eventually become dominant over the primary axis, but exceptions were found in which no adventitious branches were produced. During the first season of growth, stems may reach 80 cm in height (in 105 days). Older plants commonly exceeded 1 m and 1 was 205 cm tall.

Some of the characteristics contributing to the weedy nature of L. dalmatica are discussed. From Diss.Abstr., 20,(7),2508. - D.M.L.S.

839. BELL, R.S. and LARSSEN, E. (Agric.Coll., Kingston,R.I.,U.S.A.) Experiments with the germination of northern nutgrass seed. Proc. 14th NEast.Weed Control Conf., 1960, 45-8, tabs.2,bibl.2.

Germination of Cyperus esculentus seeds from 5 different states, at 85°F day temperature, varied from 28% (Maine) to 89% (Mass.). Germination at 95°F was significantly greater than at 85° and was poor at 75°F. Seed germinated nearly as well in continuous darkness as in alternating light and dark, and better when kept from 3-8 months in room storage (70°-90°F) than when kept in a 36°F refrigerator. Spraying with sodium arsenite "vine-killer" did not affect germination %.

Germination of seed sown in pots sunk into the soil at depths of 0.25, 0.5, 1 and 1.5 in. was 31, 20, 5 and 0% respectively. In a greenhouse test yield of nuts from individual seedlings ranged from 124-179.

Under field conditions germination of 3 different strains was high, intermediate, and poor respectively. - D.M.L.S. [O.W.]

840. * NATH, V.R. and RAO, V.L.N. Additional hosts for flowering parasite Dendrophthoe falcata (L.F.) Ettingsh (Loranthus longiflorus Desr.). Indian Bot.Soc.J., 1959, 38,(2),204-12.

841. * SEN, D.N. Cuscuta reflexa - a parasite on Equisetum ramosissimum Desf. var. altissimum A.Rr. Sci. & Cult., 1959, 24,(9),435-6. [C.A.]

842. * SHTURBANOVA, E. Studies on the ferments invertase and peroxidase in sunflower seedlings and plants in connection with their resistance to broom-rape (Orobanche cumana). Bulgar.Akad.na Nauk.Inst. po Rastenievud.Izv., 1959, 7,151-62, (Bulg. e.)

843. KASAHARA, Y. (Ohara Inst.Agric.Biol., Okayama Univ.,Japan). Experimental studies on the weed communities on cultivated land. II. The types of individual distribution of the important species and the law of geometrical progression of species on the weed communities. Proc.Crop Sci.Soc.Japan, 1959, 28,(1),66-7, (Jap.e.), figs.3,tabs.1, bibl.4.

The distribution of weeds which propagate by seed was found to fit the Poisson distribution whereas those that propagate vegetatively fitted the double Poisson distribution. Reference is also made to Motomura's Law of geometrical progression. - From Author's Summary. - L.K. [96(52)]

844. KASAHARA, Y. (Ohara Inst.Agric.Biol., Okayama Univ.,Japan). Studies on the species of the weeds in Japan and their geographical distribution VI. The origin and history of Japanese farm weeds and their distribution in foreign countries. Nogaku Kenkyu, 1959, 47,(1/2),123-40, (Jap.), bibl. [98(52)]

845. KASAHARA, Y. (Ohara Inst.Agric.Biol., Okayama Univ.,Japan). Studies of the kinds of the weeds of arable land in Japan and their geographical distributions. VI. The origin and history of Japanese weeds. Proc.Crop Sci.Soc.Japan, 1959, 28,(2),244-6, (Jap.e.), bibl.13. [97(52)]

846. * PAUL, A.K. and BHATTACHARYYA, R.K. Paddy field weed flora of the State agricultural farm, Chinsurah (West Bengal). Indian Bot.Soc.J., 1959, 38,(2),249-53.

847. * RAI, B. Most obnoxious weeds of East U.P. Allahabad Farmer, 1959, 33,(1),10-4.

848. ROCHECOUSTE, E., VAUGHAN, R.E. and de RELAND, L.S. (Res.Inst.,Reduit,Mauritius). Weeds of Mauritius. 1. Bidens pilosa Linn. 2. Cassia occidentalis Linn. 3. Oxalis latifolia H.B.K., Oxalis debilis Kunth., Oxalis repens Thunb. Leaf I.Sug.Ind.Res.

Inst., 1959, 1/3, pp.4, 4 and 7, figs., bibl.
The weeds are described and illustrated, vernacular names are given, ecology and distribution briefly discussed, diseases and insect pests mentioned and control measures outlined. B. pilosa is said to be well controlled in cane fields by pre-em. applications of monuron or diuron 1.6-3.2 #. This treatment is also said to be effective on Oxalis spp., however, ploughing followed by MCPA or 2,4-D (preferably esters) 3-4 # is recommended. - L.K. [18/20(698.2)]

849. WHYTE, R.O., NILSSON-LEISSNER, G. and TRUMBLE, H.C. Legumes in agriculture. F.A.O.Agric.Studies, 1953, 21,pp.367, figs., tabs.,bibl.
p. 163-7. Poisonous plants and weeds.
A brief review of some poisonous or weedy legumes. - L.K. [O.RE.]

850. WALKER, A.H. and SPERRY, O.E. Major poisonous range plants of Texas. Leafl.Texas agric.Ext.Serv., (n.d.), 114,(rev.), pp.4.
The distribution in Texas of 29 weeds poisonous to livestock is given. - Herb. Abstr., 30,(1),170.

851. SOULAGES, J. (Assoc.Argentina Criad.Cerdos). La cicuta y el romerillo son plantas toxicas para los cerdos. [Hemlock (Conium maculatum) and Baccharis conildifolia are toxic to pigs.] Prop. rur.,Montevideo, 1957, 54,(1051),80. Herb.Abstr., 30,(1),172.

852. RASMUSSEN, F. (K.Vet.-LandbHøjsk, Copenhagen,Denmark). Sort natskygge, en mulig forgiftningsårsag. [Black nightshade, a possible cause of poisoning.] Ugeskr.Landm., 1959, 104,(42),648-9, bibl.8.
The possibility of livestock being poisoned as a result of their feeding on fresh beet tops which have become mixed with black nightshade (Solanum nigrum) during harvest, is discussed. The results of trials in which the content of solanum + solanidin in fresh and ensiled black nightshade plants was determined, showed that the content of these alkaloids was considerably less in silages stored for at least 3 months than in the fresh material. - Herb.Abstr., 30,173.

853. * KEDYK, V. Cases of poisoning by Dermocybe orellana Fr. in Poland. Mykol. Sborn., 1959, 35,(5/8),95-7, (Czech.)

AQUATIC AND WOODY WEEDS AND THEIR CONTROL

See also 891.

854. KACHROO, P. and SHARMA, J.C. Further observations on the effects of a few herbicides on the aquatic flora of Bokaro Reservoir. Indian J.Malar., 1958, 12,(3),253-7.
Fernoxone [2,4-D] or Agroxone [MCPA] were equally effective against Eclipta alba. Chloroxone [2,4-D] was more effective against Mazus vugosus and Kyllingia monocephala. Fernoxone was more effective against Jussiaea repens and Monochoria vaginalis. Sagittaria guayanensis and Alternanthera sessilis died in 48-96 hours after treatment with any of the herbicides. - From Ref.Zh.Biol., 1960, 20231. - L.K.

855. FLANAGAN, J.H. (Geigy Agric.Chem.Co., U.S.A.) A review of simazine for aquatic weed control. Proc.14th NEast.Weed Control Conf., 1960, 502-5.
Includes the information that: in laboratory trials simazine 5-10 p.p.m. was effective on duck weeds [Lemna spp.], hornworts [Ceratophyllum spp.], Najas, some Potamogetons, Elodea and water star grass [Heteranthera dubia] and that Potamogeton appears to be susceptible to ca. 3 p.p.m. which concentration was not toxic to fish. - L.K. [O.W.]

856. HUCKINS, R.K. (Chipman Chem.Co.) Aquatic weed control, Carnegie Lake, Princeton, New Jersey. Proc.14th NEast.Weed Control Conf., 1960, 496-501.
The lake, its use and weed flora are briefly described. The main weed Myriophyllum heterophyllum was nearly eradicated by April treatment with 2,4-D (isooctyl ester, granular) 20 # a.e. The cleared area was invaded by Potamogeton natans, P. pusillus, P. crispus, Cabomba and Ceratophyllum demersum; these were 75% controlled by sodium arsenite 20 p.p.m. and the 2,4-D granular at ca. 40-60 # a.e. also gave promising results. - L.K. [O.W.]

857. GREELEY, J.R. (State Conserv.Dep., Albany,N.Y.,U.S.A.) A new 2,4-D amine pellet for eradication of water chestnut. Proc.14th NEast.Weed Control Conf., 1960, 488-95.
Pelleted 2,4-D (amine) 5 # a.e. applied before flowering is recommended for the control of water chestnut [Trapa natans]. Sprays were generally less effective but the addition of triethanolamine (of high specific gravity) increased the effect of an amine spray. Ceratophyllum was only temporarily affected by the granular formulation and there was little or no effect on Sagittaria or Potamogeton. - L.K. [O.W.]

858. PIERCE, M.E. (Vassar Coll.,Poughkeepsie, N.Y., U.S.A.) A study of the effect of the weedkiller, 2,4-D granular on three experimental plots of Long Pond, Dutchess County, N.Y. Proc.14th NEast.Weed Control Conf., 1960, 483-7, bibl.2.
Nymphaea odorata was eradicated and Brasenia was temporarily controlled by June applications of 1.5 p.p.m. 2,4-D granular; this concentration did not affect Potamogeton spp.. 6.2 p.p.m. reduced but did not control Utricularia and had no effect on the moss Drepanocladus uncinatus. There was no apparent effect on benthic organisms including Annelida, Gastropoda, Pelecypoda, Isopoda, Amphipoda, Insecta, fish, frogs or turtles. - L.K. [O.W.]

859. CORTELL, J.M. (Allied Biol.Control Corp.,Boston,Mass.,U.S.A.) Re-evaluation of the concentrations required for effective aquatic weed control with Silvex. Proc.14th NEast.Weed Control Conf., 1960, 478-82, tabs. 2,bibl.4.
Varying concentrations of 2,4,5-TP were applied to determine the minimum effective dose for the control of several spp. 0.3 p.p.m. controlled Myriophyllum, Nymphaea, Nuphar, Sagittaria, Cabomba, Elodea and Pontederia; 0.5 p.p.m. controlled Utricularia, Brasenia and Vallisneria; and 0.8 p.p.m. controlled Ceratophyllum, Potamogeton spp. were not controlled by even 1 p.p.m. - L.K. [O.W.]

860. HALL, W.C. Control of various aquatic weeds with Silvex. Proc.14th NEast.Weed Control Conf., 1960, 476-7, tabs.1.
The propylene glycol butyl ether ester of 2,4,5-TP 2 p.p.m. was applied to Anacharis, Ceratophyllum, Myriophyllum and Pontederia and the isooctyl ester also at 2 p.p.m. to the above weeds and also to Nuphar, Sagittaria and Typha. All treatments were successful, although low temperatures, high weed counts and plant maturity tended to delay the effect of the spray. - L.K. [O.W.]

861. PIERCE, M.E. (Vassar Coll., Poughkeepsie,N.Y.,U.S.A.) Progress report on the effect of Kuron upon the biota of Long Pond, Dutchess County,N.Y. Proc.14th NEast.Weed Control Conf., 1960, 472-5.
The area sprayed with Kuron [2,4,5-TP (propylene glycol butyl ether)] 2 p.p.m. in 1958 (see Weed Abstr., 8,1875) was resprayed with 1.2 p.p.m. in June 1959. Results on the flora and fauna were the same as in the previous year except that Potamogeton amplifolius, P. crispus, P. robinsii and P. natans were unaffected. The lasting effect of 2 successive annual sprayings on Nymphaea and Pontederia was observed. - L.K. [O.W.]

862. KIRCH, J.H., WALDRUM, J.E. and BROWN, H.F. (Amchem.Products Inc.,Ambler, Penn.,U.S.A.) The invert emulsion - A promising tool for right-of-way management. Proc.14th NEast.Weed Control Conf., 1960, 413-8, tabs.1,bibl.5.
Describes experiments on invert (water-in-oil) emulsions as ground and aerial sprays for brush control. 2,4,5-T + 2,4-D 6 lb in oil 15 gal + water 83.5 gal sprayed in June to cover 4/5 of the plants from the base upwards or used as a broadcast spray in November on dormant stems gave good ground-line kill; vigourous resprouting from the root collar zone occurred the second growing season after spraying. When the exposed root collar zone was sprayed in June with acid 12 lb in oil 30 gal + water 67 gal, 95-100% kill was obtained of red maple, scrub oak, red oak, white oak, black cherry and white ash. November basal spraying gave 20% less kill. The table shows the results in September 1959, following aerial spraying in June 1958, of brush 15 to 25 ft high using 2,4,5-T 6 # or 2,4,5-T 3 # + 2,4-D 3 # in oil 3 gal + water 7 gal. A brief description is given of a centrifugal sprayer designed for aerial spraying of invert emulsions. No damage due to drift followed aerial spraying of invert emulsions; wind velocity was 5 miles per hour and helicopter speed was 35 miles per hour.

Table headings

I = 2,4-D/2,4,5-T invert emulsion - % dead to ground.

II = 2,4-D/2,4,5-T invert emulsion - % stem reduction.
III = 2,4,5-T invert emulsion - % dead to ground.
IV = 2,4,5-T invert emulsion - % stem reduction.

NP = none present.

Species	I	II	III	IV
Blackgum [Nyssa sylvatica]	100	100	100	100
White oak [Quercus alba]	91	85	71	62
Tulip poplar [Populus sp.]	98	91	NP	NP
Red oak [Q. borealis]	72	41	40	40
Sassafras [Sassafras sp.]	100	100	NP	NP
Scrub oak [Q. ilicifolia]	NP	NP	0	0
Locust [Robinia sp.]	100	100	100	100
Cherry [Prunus sp.]	45	0	25	25
Red maple [Acer rubrum]	70	15	77	65
Sumac [Rhus sp.]	96	84	100	100
Hickory [Carya sp.]	64	50	62	62
Am. elm [Ulmus americana]	100	100	78	78
Dogwood [Cornus sp.]	90	84	96	96
Persimmon [Diospyros sp.]	90	60	88	77
Hornbeam [Carpinus sp.]	NP	NP	100	100
Serviceberry [Amelanchier]	70	30	NP	NP
Virginia pine [Pinus sp.]	29	29	0	0
Cedar [Cedrus sp.]	0	0	NP	NP
Witch hazel [Hamamelis sp.]	100	100	NP	NP
Black oak [Q. velutina]	NP	NP	50	50
Total all species	77	62	65	63

M.E.L. [O.W.]

363. KLITSCH, F.L. (Alpine Tree & Landscape Corp., W.Acton,Mass.,U.S.A.) The advantages of mist blower application of "Ammate" X for brush control. Proc.14th. NEast.Weed Control Conf., 1960, 393-7. tabs.1,bibl.2.

Describes the use of a knapsack-style mist blower of 2.5 gal capacity for spraying brush 3-5 ft high, along 90 miles of pipeline (308 ac) inaccessible to power equipment. The spray mixture used was AMS ("Ammate" X) 360 lb + Spreader-Sticker 1 quart + No. 2 fuel oil 5 gal + emulsifying agent A 1 pint, made up to 100 gal with water. Moderate winds or light rainfall did not interfere with the mist application. Coverage of dense or tall clumps required more skill than with the hydraulic method. Spray drift did not exceed that with the hydraulic method. Time taken to spray the 308 ac was 3 months. Main species present were red maple [Acer rubrum] and alder [Alnus sp.] in swampy areas and oak [Quercus sp.], hickory [Carya sp.], birch [Betula sp.] and some ash [Fraxinus sp.]. - M.E.L. [O.W.]

864. NOYES, J.H. (Univ.,Amherst,Mass.,U.S.A.) Spot treatment of monuron and fenuron to control ground juniper. Proc.14th NEast. Weed Control Conf., 1960, 450-3, tabs.1.

Monuron and fenuron slurries gave better results than fenuron pellets for the control of Juniperus communis when applied in May. It appears that < 1 g/plant may be all that is required for eradication. - L.K. [O.W.]

865. SMITH, R.N. (Gould & Smith Inc.,Presque Isle,Maine,U.S.A.) Application of "Dybar" fenuron weed and brush killer to a right-of-way in northern Maine. Proc.14th NEast. Weed Control Conf., 1960, 379-82.

Describes experiments in summer 1959 comparing the control of brush 8-15 ft high by (a) scattering pellets of fenuron and (b) basal stem applications of 2,4,5-T in oil with a knapsack sprayer. Fenuron was cheaper and easier and cleaner to handle. For brush density of 5000 stems/ac, the area covered/man/day was (a) 1.4 ac and (b) 0.6 ac. With (a) both deciduous trees and conifers are controlled and the grid method of application is effective. Method (b) requires individual stem treatment and does not control conifers. Experiments showed the 'border effect' of "Dybar" fenuron was not serious. - M.E.L. [O.W.]

866. BOYD, W.I. and POULOS, P.L. (Ind.& Biochemicals Dep.,E.I.du Pont de Nemours & Co.) Brush control with spot applications of fenuron in the northeast. Proc.14th NEast.

Weed Control Conf., 1960, 398-405, figs.2, tabs.3.

The % kill of brush following spot treatments on 11th May 1956 of fenuron (a) 1.13 g and (b) 3.3 g/cluster was:- 7th July, 1957 (a) 39%, (b) 67%; 7th July, 1958 (a) 72%, (b) 96%; 8th September, 1959 (a) 83%, (b) 98%. About 20 species were present; the (a) % present attime of treatment and (b) % of seedling population 4 seasons after treatment was as follows: oaks [Quercus spp.] (a) 60%, (b) 26%; grey birch [Betula lutea] (a) 11%, (b) 36%; maple [Acer sp.] (a) 7%, (b) 2%; hazel [Corylus sp.] (a) 6%, (b) 15%; cherry [Prunus sp.] (a) 3%, (b) 5%; poplar [Populus sp.] (a) 6%, (b) 7%; pine [Pinus spp.] (a) 6%, (b) 6%; shadbush [Amelanchier sp.] (a) 1%, (b) 2%. Only 11% of the regrowth seedlings were >2 ft. Trees within a 5 ft distance and some oak and white pine 25 ft distant from the edge of the treated plot were affected. Treatments in November, March, July and April showed that the kill depended on the time elapsed and not the time of treatment. Good ground cover was established. - M.E.L. [O.W.]

867. HAMILTON, L.S. (Cornell Univ., Ithaca,N.Y.,U.S.A.) Successful killing, but no chemi—peeling, using certain amines in frills during early summer. Proc.14th NEast. Weed Control Conf., 1960, 446-9, tabs.1, bibl.11.

Amitrol 20 lb/100 gal, polychlorobenzoic acid (PBA) dimethylamine 40 lb a.e./100 gal, MCPA (dimethylamine) 40 lb a.e./100 gal, 2,4-D (dimethylamine) 40 lb a.e./100 gal, 2,4,5-T (triethylamine) 40 lb a.e./100 gal and a mixture of equal parts of the last 2 at 53 lb a.e./100 gal were applied in water in June to complete frills of 3-5 trees each mostly of 3-6 in. d.b.h. of sugar maple [Acer saccharum], red maple [A. rubrum], beech [Fagus sp.], basswood [Tilia americana], yellow birch [Betula lutea] and black birch [B. lenta]. When assessed 3 months later, only MCPA, 2,4,5-T and the mixture had given >70% top kill; after 15 months 2,4,5-T + 2,4-D had given 100% kill, MCPA 96%, PBA 80%, 2,4-D 50% and amitrol 29%. The maples were the most resistant spp. What regrowth occurred was weak and was not considered of significance (it was partially suppressed by deer). - L.K. [O.W.]

868. JEFFERS, W.A. (Davey Tree Expert Co., Kent,Ohio,U.S.A.) Late season foliage applications of amino triazole and amino triazole-benzoic combinations on black locust. Proc.14th NEast.Weed Control Conf., 1960, 383, tabs.2.

Overall sprays of amitrol + 2,3,6-TBA were no more active on black locust [Robinia pseudoacacia] than either compound alone; August applications were much superior to September. Amitrol alone gave promising results on white ash [Fraxinus americana], wild black cherry [Prunus serotina] and staghorn sumac [Rhus typhina] but not on largetooth aspen [Populus grandidentata], black birch [Betula lenta], choke cherry [Prunus virginiana], elderberry [Sambucus sp.], black gum [Nyssa sylvatica], hazlenut [Corylus avellana], hawthorn [Crataegus monogyna], shagbark hickory [Carya ovata], red maple [Acer rubrum], white mulberry [Morus alba], red oak [Quercus borealis], white oak [Q. alba], sassafras, shadbush [Amelanchier sp.] and tulip tree [Liriodendron tulipfera]. The mixture was not more effective than amitrol alone on white ash, largetooth aspen, choke cherry, wild black cherry, black gum, hazlenut, hawthorn, shagbark hickory, red maple, sugar maple [Acer saccharum], red oak, shingle oak [Quercus imbricaria], white oak or tulip tree. TBA alone gave poor results on white ash, choke cherry, wild black cherry, American elm [Ulmus americana], hazlenut, bitternut hickory [Carya sp.], red oak, shingle oak, white oak and poplar [Populus sp.]. - L.K. [O.W.]

869. CHAPPELL, W.E. and SAYRE, R.E. (Agric.Exp.Sta., Blacksburg,Va.,U.S.A.) Proc.14th NEast.Weed Control Conf., 1960, 419-21, tabs.2.

Almost complete kill without resprouting of black locust [Robinia pseudoacacia] 10-15 ft high resulted from spraying in June with 2,3,6-TBA (amine) + amitrol. Combinations of amitrol with 2,4-D and 2,4,5-T were less effective. Amitrol had less effect on resprouting in other species. - M.E.L. [O.W.]

870. BYRNES, W.R. (Sch.For.,Penn.State Univ.,Penn.,U.S.A.) Long term evaluation of chemical brush control on a power line right-of-way. Proc.14th NEast.Weed Control Conf., 1960, 422-29, tabs.3,bibl.7.

Six methods of brush control were compared: (a) unsprayed control, hand cut in April, 1958, 6 growing seasons after the initial clearance; (b) broadcast foliage spray 2,4-D + 2,4,5-T (butoxy ethanol esters)

1:1 4 lb combined a.e./100 gal applied in June 1953; (c) semi-basal spray 2,4-D + 2,4,5-T (acids) 1:1 6 lb combined a.e. in oil carrier 10 gal/100 gal spray, applied June, 1953; (d) general summer basal spray 2,4-D + 2,4,5-T (acids) 1:1 12 lb combined a.e. + oil carrier/100 gal spray, applied June, 1953; (e) selective winter basal spray 2,4,5-T (butoxy ethanol ester) 12 lb a.e. in oil carrier/100 gal spray, applied February, 1954; (f) broadcast spray AMS 0.75 lb/gal water + sticker spreader. By the end of the second season, 94-99% top kill resulted from all chemical treatments. In 1954 the amount of regrowth (sprouts and suckers) as % original number of stems/ac was (b) 21%, (c) 8%, (d) 7%, (e) 5%, (f) 27%. A follow-up basal spray in July 1954 eliminated woody shrub in all areas by 1959. Where 1954 follow-up treatments were omitted, the main species present in the regrowth, August 1957 were sassafras [Sassafras sp.] on (e) and to a lesser extent on (d), red maple [Acer rubrum] on (f) and mixed oaks [Quercus spp.] on (b). Regrowth on (a) in 1957 was 6-15 ft high, handcutting 1958 resulted in a dense layer of brush 2-6 ft tall in 1959. Prior to chemical treatments the main species in the ground layer vegetation were Pteridium aquilinum, Carex pensylvanica, Panicum latifolium, P. commutatum, Agrostis perennans, Oryzopsis asperfolia, Festuca elatior, Erechtites hieracifolia, Lysimachia quadrifolia, Viola fimbriatula, Solidago sp., Potentilla canadensis, Anaphalis margaritacea, Rumex acetosella, Vaccinium vacillans, V. angustifolium, V. stamineum, Gaylussacia baccata and Comptonia peregrina. The disturbance in this vegetation following 1953 treatments was (b) and (f) > (c) > (d). By 1959 plot (b) contained P. aquilinum-C. pensylvanica-grass-mixed herb with a small amount of Vaccinium spp.; plot (c), P. aquilinum-C.pensylvanica-L. quadrifolia with scattered Vaccinium spp.; plots (d) and (e), no change apart from increase in L. quadrifolia; plot (f) showed increase in L. quadrifolia and C. peregrina; Vaccinium spp. and G. baccata were eliminated. - M.E.L. [O.W.]

871. QUINN, L.R. and GRIFFING, J.B. O controle do "leiteiro" e do "amendoim" em pastagens. [The control of [Tabernae montana fuchsiaefolia] and [Pterogyne nitens] in pastures.] Publ.IBEC Res.Inst.New York, 1958, pp.15, (Portuguese), figs.14. Recommends 2,4,5-T (ester) in diesel oil (1:50) applied, preferably after cutting down to stumps 30-40 cm high, in rainy weather at period of active growth, with repeat if necessary 6-12 months later. If shrubs are cut, application should be made the day of cutting. An area of 15-25 cm round the base of the shrub should be wetted. Good pasture management is necessary after treatment. - D.M.L.S.

872. LLOYD, R.D. (State Univ.,Utah,U.S.A.) Costs and returns from seeding publicly-owned sagebrush-grass ranges to crested wheatgrass. Diss.Abstr., 1960, 20,(8),3004, Microfilm $2.50, pp.127.

873. TRUMBO, H.A. and CHAPPELL, W.E. (Comm. Game & Inland Fisheries,Va.,U.S.A.) Techniques involved in the use of chemicals for establishing wildlife clearings. Proc.14th NEast. Weed Control Conf., 1960, 454-9, tabs.2. Monuron and fenuron were applied in June at 5-10 g/stem (5 g to stems up to 5 in. d.b.h. 10 g to larger), AMS to complete frills at 7 lb/2 gal water in August and 2,4,5-T to axe cuts 4 in. apart as 12 lb/100 gal oil. The % kill obtained after 1 year with the above 4 compounds were: red oak [Quercus borealis] 97, 90, 90, 2; white oak [Quercus alba] 99, 87, 93, 4; chestnut oak [Q. prinus] 95, 90, 90, 1; chestnut [Castanea sp.] -, 100, 100, 35; sassafras [Sassafras sp.] 82, 52, 87, 15; black gum [Nyssa sylvatica] 82, 60, 96, 21; dogwood [Cornus sp.] 78, 91, 92, 27; black locust [Robinia pseudoacacia] -, -, 100, 0; red maple [Acer rubrum] 86, 61, 89, 29; hickory [Carya sp.] 84, 76, 82, 3; sumac [Rhus sp.] 100, 100, 63, 7; pine [Pinus sp.] 100, 99, -, -; cherry [Prunus sp.] -, 100, -, -; thornapple [Crataegus sp.] 100, -, -, -; serviceberry [Amelanchier sp.] 86, 31, 87, 53; sourwood [Oxydendrum arboreum] 67, 80, 88, 3; witchhazel [Hamamelis sp.] 78, 53, 97, 17; red cedar [Juniperus virginiana] -, 100, -,-. In another trial on all of the above spp. except sumac, thornapple and red cedar and also including yellow poplar [Liriodendron tulipifera] and buffalo nut (Pyrularia pubera), fenuron at 1 g/stem gave as good control as 4 g/stem except on dogwood, red maple, hickory, sourwood and buffalo nut; only dogwood and perhaps serviceberry was less well controlled by 2 g/stem than 4 g. - L.K. [O.W.]

See also 772,775,783,786,787,789,795,797,801,802,803,806,807,808, 809,810,811,812,813,814,815,816,818,825,826,848,870,921.

874. BUTTON, E.F. and WRIGHT, J.L. (Coun. State Highway Dep.,U.S.A.) Comparison of certain weedkillers for roadside weed control in central Connecticut. Proc.14th NEast.Weed Control Conf., 1960, 511-9, figs. 2,tabs.1.
At equal rates, diuron was considerably more effective on grasses and somewhat more effective on broad leaved weeds than simazine. At equi-effective rates simazine showed a greater tendency to wash downhill than diuron. - L.K. [O.W.]

875. SWITZERLAND. (Sta.Federales d'Essais Agricoles,Lausanne,Switzerland). Landw. Jahrb.Schweiz, 1958, 72.
p.379-80. Dalapon 5% at 400 ml/m^2 applied twice on 6th June and 18th August killed all plants of D. glomerata, Agrostis alba and Agropyron repens by the end of November. One application only caused serious stunting of A. repens and affected flowering.
p. 380-2. Tropotone (MCPB) 0.75% controlled Rumex obtusifolius when applied at the rosette stage in early spring without adverse effect on Trifolium repens. Removal of flowering stalks was an essential part of the control measures, since grazing animals are the main agent of seed dissemination. R. alpinus was more difficult to control; Tributon (2,4-D + 2,4,5-T volatile esters) gave only 50% control. 2,4-D + 2,4,5-T esters 10% in petroleum applied to cut stumps of Juniperus communis caused rapid root decompositiion. Veratrum album was controlled by 2,4-D + 2,4,5-T esters when treated in May at height of 10 cm but was more resistant when 30 cm high. - From Herb.Abstr., 30,7 and 208. - D.M.L.S.

876. DURFEE, J.W., LACKMAN, W.H. and LINCOLN, W.C. (Agric.Exp.Sta.,Amherst,Mass., U.S.A.) Control of northern nutgrass with Eptam and Atrazine. Proc.14th NEast.Weed Control Conf., 1960, 214-6, tabs.3,bibl.2.
Autumn applications of EPTC 20 and 40 # incorporated into the soil gave excellent and almost complete control respectively of Cyperus esculentus the following year but 10 # failed to give significant control. Spring applications of EPTC 6 and 10 # and of atrazine 4 and 8 # incorporated into the soil gave excellent seasonal control with little difference between chemicals at either rate although atrazine 8 # gave the best results. Atrazine 10 and 20 # sprayed on plants averaging 10 in. in height in June gave at least seasonal control without any sprouting whereas 5 # only gave top kill. - D.M.L.S. [O.W.]

877. * KRAMER, M. Chemical control of nutgrass (Cyperus rotundus L.) Biologico, 1959, 25,(2),39-44, (Portuguese.e.),bibl.

878. AUSTRALIA. Australas.Irrig., (n.d.), 4,(8).
The ban on the sale of seed of Sorghum almum has been lifted because of the value of this pasture species as summer fodder. Sale of the seed was originally prohibited because of the prussic acid content of the plant and the possibility that it might develop into a weed as noxious as S. halepense. To ensure that seed of S. almum contains none of S. halepense, a seed certification scheme for S. almum has now been established in New South Wales and Queensland. - Herb. Abstr., 30,430.

879. FLETCHALL, O.H., MURPHY, W.J. and FLEETWOOD, J.R. (Coll.Agric.,Columbia,Mo. U.S.A.) You can control Johnsongrass. Bull.Mo.agric.Exp.Sta., 1959, 729, pp.15, figs.13,tabs.1.
The growth habit of Johnson grass [Sorghum halepense] and its seeds are described and illustrated by photographs. Recommended control measures are: pasturing, cultivation, dalapon, soil sterilants, oiling, smothering, burning, grazing by geese in cotton fields and confining pigs on ploughed land. - L.K. [20(77.8)]

880. VENGRIS, J. (Univ.,Amherst,Mass., U.S.A.) Quackgrass control in field corn. Proc.14th NEast.Weed Control Conf., 1960, 370-3, tabs.2.
Atrazine 4 and 8 # and EPTC 4 and 6 # gave more promising results as pre-planting treatments for the control of Agropyron repens than dalapon 4-10 #, simazine 4-8 #, amitrol 4 #, Fenac [2,3,6-trichlorophenylacetic acid] 2-4 #. Mixing simazine or atrazine with dalapon or applying them about 3 weeks after only very slightly improved the control obtained. Autumn applications of dalapon, simazine, atrazine, and mixtures of dalapon and the latter 2 were better than spring. - L.K. [O.W.]

881. FERTIG, S.N. (Cornell Univ., Ithaca, N.Y., U.S.A.) 1959 results of chemical treatments on quackgrass (Agropyron repens) control. Proc. 14th NEast. Weed Control Conf., 1960, 343-52, tabs.5.

The following were applied in October to a quackgrass stand, half the plots having been mowed in September: fenac 4, 8 and 12 #, amitrol (3 formulations) 4, 8 and 12 #, dalapon 10 and 15 #, simazine 5 and 10 #, propazine 5 and 10 #, simazine 4 # + amitrol 4 #, or + dalapon 4 #. Half of the plots were ploughed 3 weeks after treatment and half on May 2. Maize was sown on May 20th. All plots received 2 cultivations during the growing season. No further weed control treatment was applied. After maize harvest, nitrogen at 50 # was applied in September to stimulate quackgrass shoot development.

Significant increases in silage maize yields were obtained from fenac 4 and 8 # and, on spring ploughed plots, 12 #, simazine 5 and 10 #, and propazine 5 and 10 #. Yields were favoured by spring ploughing in the case of fenac, amitrol, simazine and the mixtures, by autumn ploughing with propazine, by no mowing with fenac and amitrol, and by mowing with dalapon and propazine. From a comparison of counts in June and early November shoot growth was less stimulated by September nitrogen application in the simazine and propazine plots than in any of the other plots and less by simazine 10 than in the 5 # plots.

In greenhouse residue studies with soil taken at 3 depths (0-3, 4-6, and 7-10 in.) from the plots in June, fenac caused pronounced injury to red kidney beans at all rates, at all depths, and equally to 3 crops grown from June to September; the higher the rates the severer the injury. Oats, ryegrass and wheat were also injured but not seriously. Simazine and propazine also caused injury to red kidney beans at both rates and at all depths but not until the pre-bloom stage. No injury to crops was observed from amitrol or dalapon. - D.M.L.S. [O.W.]

882. le BARON, H.M. and FERTIG, S.N. (Cornell Univ., Ithaca, N.Y., U.S.A.) Relationship between control of quackgrass (Agropyron repens) and carbohydrate content of rhizomes. Proc. 14th NEast. Weed Control Conf., 1960, 357-62, bibl.7.

All possible combinations of the following treatments were applied to a quackgrass infested area after mowing and removing the quackgrass in mid-August: (1) autumn chemical (dalapon 7.5 and 15 # and polychlorobenzoic acid 10 #), autumn ploughing; (2) autumn chemical, spring chemical, spring ploughing; (3) spring chemical, spring ploughing; (4) spring chemical, fallow; also nitrogen at 0, 50 and 100 #. A rapid response of top growth to autumn nitrogen resulted in a simultaneous decrease in fructose content of the rhizomes. Ploughing either in autumn or spring tended to give slight decreases in fructose, while fallowing resulted in continuous and extreme depletion. Dalapon resulted in considerable fructose decrease (with little difference between the effect of the rates), although with no further treatment or even with ploughing some rhizomes survived and were apparently healthy. There was little or no effect from polychlorobenzoic acid. There were indications that nitrogen followed by dalapon gave significantly better control and depletion of rhizome reserves than dalapon alone. The interaction between dalapon and fallow also appeared important. - D.M.L.S. [O.W.]

883. SANTELMANN, P.W.C. (State Univ., Ohio, U.S.A.) Herbicide studies: I. The translocation and use of sodium 2,2-dichloropropionate as an herbicide. II. The use of herbicides in establishing legume seedlings. Diss. Abstr., 1960, 20, (8), 3008-11, Microfilm $2.50, pp.134.

I. In the field, dalapon 5-40 # killed quackgrass (Agropyron repens) foliage; no rate eradicated it and there was moderately rapid recovery from all but the 40 # rate. Ploughing 10 days before or after applying dalapon gave better results than dalapon alone. In greenhouse experiments, immersion in 10 and 100 p.p.m. solutions of dalapon did not harm quackgrass foliage, but 1000 p.p.m. caused severe damage, and 5000 p.p.m. death of the foliage; however, new shoots arose from most rhizomes within 60 days. The greatest translocation of dalapon occurred when the plants were 12-18 cm tall and a concentration of 50 000 p.p.m. was used. Injuring the leaves did not increase translocation, but when they were depleted of photosynthate it was decreased; addition of sucrose did not increase translocation. Dalapon was absorbed rapidly through quackgrass foliage, and within 3 hours enough dalapon translocated out of the treated shoot to kill other shoots on the rhizome. A dalapon solution of $\geq$10 000 p.p.m. was needed to kill rhizomes, but lower concentrations caused bud inhibition for 20 to 60 days. Treatment of the soil surface over rhizomes with dalapon 25, 30 and 50 # caused bud inhibition for 25 to 60 days. - J.W.B. [O.F.]

884. UNITED STATES. Progress in halogeton control. Agric.Res., 1960, 8,(9),14, figs.1.
Sodium chloride is essential for the vigorous growth of halogeton [Halogeton glomeratus]. It is recommended that the weed be sprayed with 2,4-D 2 # at the cruciform (4 horizonal branches) stage and before stem elongation; the treated area should be revisited after 3 weeks for hoeing, pulling or re-spraying survivors and again before seed set for re-treatment with 2,4-D (ester) 4 lb + dinoseb in 15 gal diesel oil/ac. 2,3,6-TBA has shown promise for autumn or early winter application when forage species are dormant or semi-dormant. - L.K. [O.W.]

885. SCHUBERT, O.E. (W.Va Univ.,Morgantown, U.S.A.) Evaluation of five herbicides for killing established poison ivy in an apple orchard one and two years following a single treatment. Proc.14th NEast.Weed Control Conf., 1960, 219-20.
After 2 years poison ivy [Rhus radicans] was still greatly reduced by the following (in order of effectiveness) all at 4 #, except AMS which was at 150 #, in 200 gal/ac: amitrol, 2,4,5-T (ester), 2,4,5-TP, AMS, 2,4,5-T (amine). - D.M.L.S. [O.W.]

886. SCHULDT, P.H., LIMPEL, L.E. and LAMONT, D. Crop tolerance and weed susceptibility to DAC-893, a new pre-emergence herbicide. Proc.14th NEast.Weed Control Conf., 1960, 42-3.
Two years' trials with DAC-893 (dimethyl-2,3,5,6-tetrachloroterephthalate) have shown it to be active against weeds before or shortly after their emergence. It is relatively inactive as a foliage spray and is said to be safe to handle. Susceptible weeds included: Portulaca oleracea, Stellaria media, Rumex crispus, Plantago lanceolata, Setaria viridis, S. lutescens, Digitaria sanguinalis, D. ischaemum, Panicum dichotomiflorum and Mollugo verticillata. Moderately susceptible weeds included: Amaranthus retroflexus, Chenopodium album, Echinochloa crus-galli, Poa annua and Sorghum halepense and resistant weeds included: Ambrosia artemisiifolia, Datura stramonium, Arctium minus, Thlaspi arvense, Agropyron repens, Avena fatua, Brassica sp., Erigeron canadensis, Polygonum persicaria and P. pensylvanicum. Tolerant crops included: lucerne, cabbage, maize, cotton, gladiolus, Lima beans, oats, onions, peas, potatoes, red clover, sorghum, soybeans, turnips, tomato transplants and wheat. Plants showing a variable response included: birdsfoot trefoil, flax, snap-beans, squash, cucumber, pumpkin, spinach, lettuce, millet, beets and seeded tomatoes. - L.K. [O.W.]

887. SPRINGER, F.D. (Agric.Exp.Sta., Newark,Delaware,U.S.A.) The effectiveness of simazine and atrazine as pre-emergence herbicides on corn in Delaware in 1959. Proc.14th NEast.Weed Control Conf., 1960, 237-40, tabs.2.
Atrazine gave somewhat better control of broadleaf weeds, and much better control of grasses, than simazine and was no more injurious to maize. Atrazine 2-4 # gave promising results on nutgrass [Cyperus spp.]. - L.K. [O.W.]

888. THERON, E.P. et al. (Agric.Coll., Cedara,Natal,S.Africa). Four-camp system not always solution to problem of selective grazing. Fmg in S.Afr., 1959, 35,(2),6-10.
With the object of eradicating or reducing Ngongoni grass (Aristida junciformis) in the Ngongoni sour veld, a 3-camp rotational resting system, in which one camp was rested during different parts of the season in successive years, and the other 2 were grazed in rotation, was compared with a 4-camp rotational grazing system in which each camp was rested for one complete season every 4 years, the others being grazed in rotation. The former gave better results, probably because of defoliation of Ngongoni grass by mowing during the growing season. Cutting for hay in January or February when Ngongoni is most sensitive to defoliation, reduced growth and seed setting, but improved botanical composition and basal cover and thus increased carrying capacity. - Herb.Abstr., 30,51.

889. * GARG, D.K. Kans - a problem of Madhya Pradesh farmers. Allahabad Farmer, 1959, 33,(3),185-91.
Saccharum spontaneum.

890. ILNICKI, R.D. (Agric.Exp.Sta., Rutgers Univ.,New Brunswick,N.J.,U.S.A.) The activity of several substituted benzoic and phenoxyalkylcarboxylic acids on small grains and dog fennel. [Abstract] Proc. 14th NEast.Weed Control Conf., 1960, 363.
2-methoxy-3,6-dichlorobenzoic acid was much more active on dog fennel [Anthemis cotula], barley and wheat than 2,3,6-TBA; 2-methyl-3,6-dichlorobenzoic acid was still more toxic to the crops. 2-methoxy-3,5,6-trichlorobenzoic acid was more active on dog fennel than 2,3,6-TBA, but not more injurious to the crop. 2-methoxy-3,5-dichlorobenzoic acid and 3-amino-2,5-dichlorobenzoic acid were relatively inactive on crop and weeds. Good control of dog

fennel was also given by 2,4,5-TP, 2,4-DP and mecoprop. - L.K. [O.W.]

891. MULLER, E.W. (Dep.Public Works, Hornell,N.Y.,U.S.A.) Guide rail. Proc. 14th NEast.Weed Control Conf., 1960, 535-42.
Consists of a long table giving preliminary results of applying a number of herbicides for non-selective weed control. Radapon [dalapon] 30 # + fenac 32 # a.i. gave particularly promising results. D + T [2,4-D + 2,4,5-T] accidentally mixed with fenac gave good stem kill of ash [Fraxinus sp.]. Applying silicone with simazine or monuron in an attempt to seal in the herbicide had no apparent effect. - L.K. [O.W.]

892. GREAT BRITAIN. Mistletoe in Australia. Nature, Lond., 1960, 186, (4719), 135.
Mistletoe [Loranthus spp.] infestations in Australia have been increasing over recent years. When injected into the host tree, 2,4-D (hydrazine) has given a speedier and equally good result as the triethanolamine salt. Mistletoe may not die till 2 years later. A single treatment usually kills 70-90% of the mistletoe and a second treatment about 50% of the remainder. The host trees do not appear to become sensitised to 2,4-D, nor the mistletoe resistant. This method has given reasonably good results on 7 of the 8 spp. of Eucalyptus on which it was tried. - L.K. [O.W.]

893. SCHOFIELD, G. (Dep.Public Works, Utica,N.Y.,U.S.A.) Chemical control of vegetation under guide rail District # 2, New York State Department of Public Works. Proc.14th NEast.Weed Control Conf., 1960, 529-32.
Includes the information that Asclepias syriaca appears to be resistant to simazine 20 #. - L.K. [O.W.]

894. BAILEY, J.S. and LORD, W.J. (Univ., Amherst,Mass.,U.S.A.) Control of the common brake, Teridium aquilinum L., in lowbush blueberries with polyborchlorate. Proc.14th NEast.Weed Control Conf., 1960, 60-5, tabs.5,bibl.2.
Experiments over 8 years are described. Rates of over 1000 # polyborchlorate (disodium octaborate tetrahydrate 73%, sodium chlorate 25%) were too injurious, and applications (of 400-1000 #) in November preceding the crop year ruined the crop. After applications of 400-600 # made before the burn, recovery of blueberries was much better from autumn than from spring treatment, and there was no difference in recovery due to rate in either case. Under favourable conditions blueberries survived and recovered after 500 #, and after autumn application plant population even increased. Control of Pteridium aquilinum was variable but generally good from 400-600 #, and from applications before the burn was better after spring than after autumn applications but not significantly so. After both autumn and spring treatments the % kill was greater in the year following than in the year of treatment, and the increase was significant in the case of autumn treatments. Differences in kill from rates of 400, 500 and 600 # were not significant, so that 400 # may be more than is necessary. - D.M.L.S. [O.W.]

895. SPEARS, J.E. (Pest Control Div.,ARS, U.S.Dep.Agric.,Wash.D.C.,U.S.A.) Witch weed. A new parasitic plant in the United States. Agric.Chemic., 1960, 15,(3),42-4,113-4, figs.6.
Includes a brief description of the steps taken in 1959 to eradicate Striga asiatica. These included the growing of catch crops on nearly 16 000 ac and the use of over 60 500 gal of 2,4-D. - L.K. [O.W.]

896. * SOKOLOV, A.F. [Separation of lucerne seed from poisonous and difficult-to-separate weeds on the basis of size differences.] Sborn., nauch.issled.Rab.,Tsen.Bull.tekh.Inf., Min.trakt.selsk.Mashinostroen.,Mostk., 1956,(8), 50, (Russ.)

897. STRYCKERS, J. Totale vernietiging van vegetatie. [Total eradication of vegetation.] Meded.Landbouwhogesch.Gent, 1959, 24,(5/4), 864-80, (Du.du,f.e.g.), figs.9,tabs.10,bibl.9.
Reports the results of experiments on the application of simazine, trietazine, propazine, atrazine, monuron, diuron, fenuron, neburon,amitrol + simazine or + monuron, MH + simazine or + monuron, sodium chlorate + monuron or + simazine, AMS + monuron or + simazine, dalapon + monuron or + simazine, TCA + simazine or + monuron, simazine + monuron + sodium chlorate, erbon, borates + sodium chlorate, borates + monuron. The only unexpected observation was the favourable results given by mixtures of MH 10 or 20 # with simazine or monuron. Spring treatments gave the best results; autumn treatments needed preliminary mowing. - L.K. [100(493)]

Noted

898N. * WALLER, T.M. Spot treat to control Johnson and Bermuda grass in cotton. Ext. Pamphl.Miss.State Coll., 1959, 394,pp.2. [Sorghum halepense and Cynodon dactylon].

899N. SANTELMANN, P.W. and MEADE, J.A. (Agron.Dep.Univ.Md,U.S.A.) Johnson grass control. Mimeo.Publ.Univ.Md Agron.Dep., 1959, 16.
Recommendations for preventive measures and the control of Johnson grass [Sorghum halepense] by cultural and chemical methods. - M.E.L. [108(75.2)]

900N. SANTELMANN, P.W. and MEADE, J.A. (Agron.Dep.,Univ.Md,U.S.A.) Bermuda grass control. Mimeo.Publ.Univ.Md Agron.Dep., 1956, 20.
Recommendations for the eradication of Bermuda grass [Cynodon dactylon] by cultural or chemical (dalapon, TCA, monuron) methods. - M.E.L. [104(75.2)]

CHEMISTRY, PHYSICS, TOXICOLOGY, RESIDUES AND SOILS

See also 771,858,861,921.

901. ORTH, H. (Biol.Bundesanst.,Fischenich Bez.Köln,Germany). Untersuchungen über die Flüchtigkeit des CIPC und anderer Herbizide. [Investigations on the volatility of chlorpropham and other herbicides.] NachrBl.dtsch. PflSchDienst.Braunschweig, 1960, 12,(3), 37-44, (G.e.), figs.2,tabs.7,bibl.5.
The volatility of chlorpropham, HS 55 (cyclooctyldimethylurea + butinolchlorophenylcarbamate - CIU + BiPC), propazine and thiodiazol was tested by suspending cress seeds over the compound mixed with sand in a closed container at 15-40°C and by drawing a stream of air over the compounds at 23°C and collecting it in a series of water bottles. The results were assessed as inhibition of (1) germination and (2) root length; in all cases (2) was a much more sensitive indicator than (1). More chlorpropham volatilised from an emulsion than from granules and 1% of the concentration used in practice was enough to cause an effect. In Method 1, thiodiazol was somewhat more volatile than chlorpropham; HS 55 was much less so and propazine appeared to be non-volatile. In Method 2 only chlorpropham produced any effect. Tests with the emulsifier and solvent used with chlorpropham showed that both were markedly volatile and injurious, although less so than the herbicide itself; the solvent appeared to be more injurious than the emulsifier. - L.K. [O.W.]

902. McALLISTER, S.H. Formulation of pesticides. Agric.Chemic., 1960, 15,(3), 35-8, figs.3,tabs.4.
A review covering types of formulation, manufacture of formulations and cost of plant. - L.K. [O.W.]

903. HOSHINO, M. (Univ.,Nagoya,Japan). Effect of 3-amino-1,2,4-triazole on the experimental production of liver cancer. Nature, Lond., 1960, 186,(4919),174-5, tabs.1,bibl.5.
Intraperitoneal injection of amitrol was found to inhibit the production of liver tumors in rats caused by 4-dimethylaminoazobenzene. - L.K. [O.W.]

904. GREEN, G.C. (Shell Chem.Corp., 460 Park Ave,N.Y.,U.S.A.) The Aqualin herbicide process for aquatic weed control. Proc.14th NEast.Weed Control Conf., 1960, 506-7.
Includes the information that Aqualin [acrolein] at up to 12 p.p.m. had no effect on the bottom fauna of a lake (Chironomid, Ceratopogonid, Tuberficid, Chaoborus and Tanypus). In tests on lactating mammals no milk contamination occurred at rates "far in excess of those that would be encountered under any conditions of use". - L.K. [O.W.]

905. SUDAK, F.N. and CLAFF, C.L. (Einstein Coll.Med.,N.Y.,U.S.A.) Survival of Uca pugnax in sand water and vegetation contaminated with 2,4-dichlorophenoxyacetic acid. Proc. 14th NEast.Weed Control Conf., 1960, 508-10, bibl.8.
The LD 50 of 2,4-D to the fiddler crab, Uca pugnax was found to be 1000 p.p.m. after 17 days exposure; higher concentrations produced the same mortality in shorter periods. If the crabs were immersed in a 1000 p.p.m. 2,4-D solution for only 12 hours and then rinsed in fresh sea water, 10-20% were killed within 2 weeks. Injection into the hemocoelom showed "the toxicity of this compound ... to be greater than 0.4 mg/g". - L.K. [O.W.]

906. REID, J.J. (Dep.Bacteriology,State Univ.,Univ.Park,Penn.,U.S.A.) Bacterial decomposition of herbicides. Proc.14th NEast.Weed Control Conf., 1960, 19-30, tabs.6.
Gives the results of applying single or repeated fairly high concentrations (25->500 p.p.m.) of a number of herbicides on soil nitrification, on the persistence of these herbicides and of their utilisation as sole carbon source by various bacteria. - L.K. [0.W.]

907. SWITZER, C.M. and RAUSER, W.E. (Ontario Agric.Coll.,Canada). Effectiveness and persistence of certain herbicides in soil. Proc.14th NEast.Weed Control Conf., 1960, 329-35, tabs.4,bibl.3.
Sowing crops at various periods after treatment showed the persistence of triazines to be (in decreasing order): simazine, atrazine, methoxypropazine, propazine, ipazine [2-chloro-4-isopropylamino-6-diethylamino-s-triazine], trietazine and chlorazine [2-chloro-4,6-bis(diethylamino)-s-triazine]. Urab [fenuron trichloroacetate] and monuron were of similar persistence to simazine. Urox [monuron trichloroacetate] was the most persistent compound. - L.K. [0.W.]

APPLICATION AND MACHINERY

See also 863.

908. GALLWITZ, K. (Univ.,Göttingen, Germany). Neuere Erfahrungen beim Nassstäuben. [Recent experiments with wet dusting.] Dtsch.Agrartech., 1959, 9,(2),74-7.
Sprays were applied from adjacent nozzles at the same time as dusts containing stickers, to activate the sticker and thus increase retention. It was found that for the dust to be wetted at 3 m from the point of emission a 1:1 ratio of spray and dust was necessary, whereas particles landing on a surface 1 m from the nozzles were wetted by a 0.25:1 ratio. The average size of the dust particles should be ca. 4 μ and that of the droplets ca. 100-150 μ. - L.K. [214(43)]

909. STANESCU, C. O upotrebi hemiskih sredstava iz aviona. [The application of chemicals by aeroplane.] Sumarstvo, 1958, 11,(7/8),448-54, (Serbo-Croatian).
With reference to methods of work organisation for herbicide dusting for weed control in forestry. An economic analysis of the methods is given. - Ref.Zh.Biol., 1960, 20247.

Noted

910N. MEIER, E.J. Drift sampling method told CAAA. Agric.Chemic., 1960, 15,(3),66-7, 114-5,117.
To determine safe harvesting periods. - L.K. [0.W.]

911N. WOOTEN, O.B. and HOLSTUN, J.T. (Delta Branch Sta.,Stoneville,Miss.,U.S.A.) Special equipment for chemical weed control. Bull.Miss. agric.Exp.Sta., 1959, 576,pp.14, figs.12.
A discussion of low volume sprayers covering tanks, regulators, guages, hoses, booms, nozzles, shoes and refilling. - L.K. [41(76.2)]

PHYSIOLOGY, MORPHOLOGY AND ANATOMY

912. HOFFMAN, C.E., HERSH, R.T., SWEETSER, P.B. and TODD, C.W. (E.I. du Pont de Nemours & Co.,Wilmington 98,Delaware,U.S.A.) The effect of urea herbicides on photosynthesis. Proc.14th NEast.Weed Control Conf., 1960, 16-18, bibl.3.
Experiments are reviewed from which it is concluded that monuron acts by causing the accumulation of a phytotoxic material formed during the process of oxygen evolution in photosynthesis. - Authors' Summary (modified).- D.M.L.S. [0.W.]

913. FROMANTIN, J. Les reactions des cotyledons de Cryptomeria japonica aux substances de croissance peuvent-elles contribuer a eclaircir ses parentes phyletiques? [Does the response of the cotyledons of C. japonica to growth regulators contribute to our understanding of the phylogeny of this plant?] Bull.Soc.Hist.Nat.Toulouse, 1958, 93,(1/2), 57-60.
The application of indolylacetic acid in increasing concentrations resulted in increased cotyledonary length in Cryptomeria; species of the Cupressaceae responded with slight cotyledonary decreases and Pinus decreased more constantly with treatment. 2,4,5-T in increasing concentration spread the 3 groups, with Cupressaceae stimulated slightly,

Cryptomeria stimulated much and Pinus definitely depressed. -Biol.Abstr., Plant Sciences, 1960, 35,(4),11203.

914. FROMANTIN, J. Reactions comparees des cotyledons de quelques cupressacees et abietacees (du genre Pinus) a l'action de l'acide 2,4,5-trichlorophenoxyacetique et de l'acide indol-β-acetique. [Comparative growth effects of 2,4,5-T and indolylacetic acid upon the cotyledons of Cupressaceae and Abietaceae.] Bull.Soc.Hist.Nat.Toulouse, 1958, 93,(1/2),61-9.

2,4,5-T and indolylacetic acid in increasing dosages depress the growth of the cotyledon length (2,4,5-T) of most species of pine or have little effect (indolylacetic acid) or increase the cotyledon length (2,4,5-T) of most species of Cupressaceae. The increases in length appear to result from increased cell size, especially length, and increases in fresh weight, i.e. water and not dry weight. The enlarged cotyledons are also more fragile, perhaps due to the great extension of the cell walls.- Biol.Abstr., Plant Sciences, 1960, 35,(4), 11204.

915. CHASE, R.W., ILNICKI, R.D. and SPRAGUE, M.A. (Agric.Exp.Sta.,New Brunswick, N.J.,U.S.A.) The activity of cacodylic acid as influenced by environment, surfactants, and combinations with other herbicides. [Abstract] Proc.14th NEast.Weed Control Conf., 1960, 327-8.

Includes the information that bluegrass [Poa sp.] was more susceptible to cacodylic acid when grown at 85°F than at 62°F or when put in that temperature after treatment. - L.K. [O.W.]

916. ALGHISI, P. and GHILLINI, C.A. Modificazioni del metabolismo indotte dal 2,4-D nel fagiolo. [Modifications in the metabolism of the bean induced by 2,4-D.] Not.sulle Mal.delle Piante, 1959, 49/50, 106-25, (It.it.e.), figs.9,tabs.5,bibl.43.

Changes in the nitrogen and carbohydrate content of dwarf beans treated with 2,4-D 0.25, 0.50 and 0.75% at the flower bud initiation stage are fully reported. - D.M.L.S. [60(45)]

917. KEY, J.L. (Univ.Illinois,U.S.A.) Some biochemical effects of 2,4-dichlorophenoxyacetic acid on plants. Diss.Abstr., 1960, 20,(8),3050, Microfilm $2.50, pp.122.

24 hours after spraying 2.5 day old soybean seedlings with 5 x 10^{-4}M 2,4-D, apical growth ceased, and the maturing tissues showed marked swellings (due to lateral cell expansion). After 48 hours, some tissue proliferation occurred in basal hypocotyl and root.

Analysis of the hypocotyl showed that protein, nucleic acid, and acid-soluble nucleotide increased 24 to 48 hours after spraying. The increases in RNA were quite large, particularly in the basal regions where tissue proliferation would later take place. It is believed that 2,4-D-induced syntheses of nucleic acids and soluble nucleotides are responsible for this proliferation.

Mitochondria isolated from the swollen hypocotyl and root tissue were more active in oxidative phosphorylation than comparable control mitochondria; there were increases in the relative amount and size of mitochondria, and in the soluble nucleotide and phospholipide content. The increased activity of the mitochondria was attributed to increases in soluble- and poly-nucleotides. Activity of mitochondria from the apical inhibited region was impaired by 2,4-D treatment. Normal cell expansion was associated with an increase in mitochondrial mass and in oxidative and phosphorylative activity of these mitochondria.

Separation of the soluble nucleotides by ion-exchange chromatography revealed that within a few hours after spraying with 2,4-D there was a large increase in ATP; this increase appeared to result from the activation of the respiratory system by an increase in total adenine nucleotide. [It is believed that the initial respiratory increase following 2,4-D treatment results from an increase in adenine nucleotides, rather than an increased turnover of these nucleotides occasioned by auxin-enhanced endergonic processes.]

A naturally-occurring growth inhibitor (not a nucleotide) was isolated during ion-exchange chromatography of the acid soluble nucleotides; it occurred in high concentrations in immature soybean seeds which will not germinate, and in much lower concentrations in mature seeds that will germinate. During germination this inhibitor rapidly disappears; however, treatment with inhibitory concentrations of 2,4-D, 2,4,5-T, indolylacetic acid and NAA induced a rapid resynthesis of this compound, particularly in the inhibited apical tissues. The inactive analogue 2,4,6-T, had no effect on the accumulation of the inhibitor; 2,4-D induced its syn-

thesis in cucumber seedlings but not in corn seedlings. The inhibitory action of this compound appears to lie with its ability to uncouple oxidative phosphorylation.

It is generally concluded that 2,4-D induces both promotive and inhibitory processes in the plant; the former acting through nucleotide metabolism, and the latter through the formation of natural growth inhibitors. - J.W.B. [O.F.]

918. HOMER, R.F. and TOMLINSON, T.E. (Jealott's Hill Res.Sta.,Bracknell,Berks., England). Redox properties of some dipyridyl quaternary salts. Nature, Lond., 1959, 184,(4704), 2012-3, figs.1,bibl.5.

With particular reference to resonance forms. High herbicidal activity was only found in dipyridyl diquaternary salts which give rise to free radicals on reduction. - L.K. [O.W.]

919. KOOPMAN, H. and DAAMS, J. (Philips-Duphar,Weesp,Netherlands). 2,6-Dichlorobenzonitrile: a new herbicide. Nature, Lond., 1960, 186,(4718),89-90, figs.2.

The amount of 2,6-dichlorobenzonitrile (1) required to inhibit the germination of Panicum miliaceum was ca. 1% of that for propham. The germination of wild oats [Avena fatua] was completely inhibited by 0.5-4 kg/ha (depending on soil type). Seeds of rice, groundnuts, maize and sunflower showed a distinct resistance to (1). Young plants are generally affected by (1), whereas older plants are not. When applied to stems of beans, sunflower, or groundnuts local swelling caused by increase in diameter of the parenchyma cells resulted. Tobacco and Salvia showed inhibition and thickening of leaf growth. Vapour pressure is only 3-10-6 mm mercury at 20°C but the compound is very active in vapour form. The vapour caused the collapse of oat plants subjected to it for 24 hours.

The vapour also prevented sprouting of potato tubers. (1) appears to be an anti-auxin. There was no effect on the respiration or photosynthesis of tobacco leaves placed in a saturated (18 p.p.m.) aqueous solution. The acute oral LD 50 to mice is >6 g/kg. The compound is said to be active against many weeds including Pteridium aquilinum, Stellaria media and Galium aparine. - L.K. [O.W.]

Noted

920. GREAT BRITAIN. The mode of action and use of phenylcarbamates in weed control. Pest Technol., 1960, 2,(6),10-14, tabs.1, bibl.21.

A review mainly with reference to their mode of action. - L.K. [O.W.]

MISCELLANEOUS

921. NEW ZEALAND. Rep.Dep.Agric.N.Z., 1959, pp.174.

p.14. Pasture renovation. In the summer of 1958 the use of 2,4-D and 2,4,5-T to suppress the strong growth of white clover temporarily has given better conditions for grass establishment from sod seeding or after surface cultivation.

p.33. Nassella tussock [Nassella trichotoma] regrowth has been found to be more susceptible to dalapon after burning. Dalapon applied in spring, or dalapon and TCA in autumn, followed by oversowing, has given good control of barley grass [Hordeum murinum] in many trials.

p.40. Residual effects of dalapon and amitrol. Amitrol 2 # applied to short pasture the same day as oversowing considerably reduced the numbers of white clover seedlings compared with spraying 1 or 2 weeks before sowing. There was no effect on ryegrass. The corresponding reductions in numbers following dalapon 5 # were not significant, but both white clover and ryegrass were reduced in vigour when sown the same day as spraying.

Sodium monochloroacetate (MCA). White fleshed turnips are susceptible to MCA and may be injured. MCA is promising in peas, whereas MCPB has proved unsatisfactory.

p.105. Noxious Weeds Act. A further 3 county councils assumed responsibility for administering the Act, making a total of 104. £30,077 was spent in dealing with noxious weeds on unoccupied Crown and Maori lands.

p.112. Raspberries. Geese have been used with great success for controlling grasses in raspberries. A combination of SNBP [dinoseb?] and AP [dinosam?] at 3 # mixed with dieseline and water is being used in raspberries in spring. Dalapon 5 # applied in early spring will check couch [Agropyron repens] without apparent ill-effect to the

raspberries, but if applied too late in spring causes the berries to crumble.

p.122. Strawberry Trials. In a trial where a mown sward was killed by 2 applications of amitrol and dalapon, 4 varieties were planted into the bared soil without further cultivation. Black polyethylene sheeting and sawdust were used as mulches. Plants established, grew vigorously, and cropped normally. Black polyethylene has shown promise as a mulching material in trials at Levin Horticultural Research Station.

p.127. Vines. A petroleum derivative "Weedicide" applied 2-3 times after initial hoeing appeared harmless to vines though drift sometimes caused scorch to lower leaves, but gave only partial weed control and was more costly than mechanical hoeing. Dalapon 10 and 30 lb/ac applied in November to vines 1-10 years old injured the young vines the same year and also appeared to have weakened the mature vines the following season. The higher rate suppressed couch for the season but did not eradicate it; 10 lb/ac gave only temporary top kill.

p.167. Toxicity of dinoseb to cows. In trials where dilute dinoseb was drenched to 9 heifers, daily rates of 15 mg/kg body weight and upwards proved fatal and daily rates of 8 mg/kg body weight were not.

p.168. Apiculture. Trials showed that hormone weedkillers caused only negligible bee mortality when used in the field. - D.M.L.S. [O.RE.]

922. GERMANY. Forstschutzmittelverzeichnis. [Register of forest pesticides.] Merkbl. Biol.Bundesanst.Braunschweig, 1960, 10, pp.12.

Includes sections on registered herbicides, apparatus, names and addresses of manufacturers and precautions with poisonous pesticides. - L.K. [W14(43)]

923. ANDERSON, E.G. (Nat.Weed Comm.,Dep. Agric.,Ottawa,Canada). A national organization for weed control and some significant results. Proc.14th NEast.Weed Control Conf., 1960, 7-15, tabs.1,bibl.16.

The author gives a short account of weed control organization and legislation in Canada and briefly reviews the results of various research studies. - D.M.L.S. [O.W.]

924. RAHN, E.M. (Univ.,Newark,Delaware, U.S.A.) Program for determining losses due to weeds. Proc.14th NEast.Weed Control Conf., 1960, 40-1. [O.W.]

Noted

925N. SCHMIDT, H. (Biol.ZentAnst.,Berlin, Germany). Chemische Mittel zur Unkrautbekämpfung. [Chemical compounds for weed control.] Flugblatt Biol.ZentAnst., 1960, 21,pp.10, (2nd edition), (G.).

Briefly reviews the more important commercially available herbicides and their uses. - L.K. [215(43)]

List of Common Names and Chemical Abbreviations

Revised April, 1960.

The following list, based on that adopted by the Weed Society of America has been approved by the British Weed Control Council, except those marked □.
An asterisk (*) signifies common names approved by the B.S.I.
A plus sign (+) signifies approval by the Weed Society of America.

amiben □+	3-amino-2,5-dichlorobenzoic acid
amitrol +□	3-amino-1,2,4-triazole.
AMS □+	ammonium sulphamate
atrazine □+	2-chloro-4-isopropylamino-6-ethylamino-1,3,5-triazine
barbane □+	4-chloro-2-butynyl-N-(3-chlorophenyl)carbamate
CDAA +	2-chloro-N,N-diallylacetamide
CDEA +	2-chloro-N,N-diethylacetamide
CDEC +	2-chloroallyldiethyldithiocarbamate
chlorpropham *	isopropyl-N-(3-chlorophenyl)carbamate
4-CPA +	4-chlorophenoxyacetic acid
4-CPB	4-(4-chlorophenoxy)butyric acid
2,4-D +*	2,4-dichlorophenoxyacetic acid
3,4-DA +	3,4-dichlorophenoxyacetic acid
dalapon +*	2,2-dichloropropionic acid
2,4-DB *	4-(2,4-dichlorophenoxy)butyric acid
DCU +□	dichloralurea
2,4-DEB +	2,4-dichlorophenoxyethyl benzoate
2,4-DES +*	sodium 2,4-dichlorophenoxyethyl sulphate
dichlone +*	2,3-dichloro-1,4-naphthaquinone
dinosam *	2-s-amyl-4,6-dinitrophenol
dinoseb *	2-s-butyl-4,6-dinitrophenol
diquat +	1,1'-ethylene-2,2'-dipyridylium dibromide
diuron +	N-(3,4-dichlorophenyl)-N',N'-dimethylurea
DMTT +□	3,5-dimethyltetrahydro-1,3,5,2H-thiadiazine-2-thione
DNOC *	2-methyl-4,6-dinitrophenol or 3,5-dinitro-o-cresol
2,4-DP	2-(2,4-dichlorophenoxy)propionic acid
endothal +	3,6-endoxohexahydrophthalic acid
EPTC +□	ethyl-N,N-dipropylthiolcarbamate
erbon +	2-(2,4,5-trichlorophenoxy)ethyl-2,2-dichloropropionate
fenac □ +	2,3,6-trichlorophenylacetic acid
fenuron +	N-(phenyl)-N',N'-dimethylurea
ipazine □+	2-chloro-4-diethylamino-6-isopropylamino-1,3,5-triazine
MCPA +*	4-chloro-2-methylphenoxyacetic acid
MCPB *	4-(4-chloro-2-methylphenoxy)butyric acid
MCPES +	sodium 4-chloro-2-methylphenoxyethyl sulphate
mecoprop *	dl-2-(4-chloro-2-methylphenoxy)propionic acid
MH +□	maleic hydrazide
monuron +*	N-(4-chlorophenyl)-N',N'-dimethylurea
neburon +	N-(3,4-dichlorophenyl)-N'-butyl-N'-methylurea
NPA +	N-1-naphthylphthalamic acid
PCP +	pentachlorophenol
PMA +	phenyl mercuric acetate
propazine □+	2-chloro-4,6-bis(isopropylamino)-1,3,5-triazine
propham *	isopropyl-N-phenylcarbamate
simazine+	2-chloro-4,6-bis(ethylamino)-1,3,5-triazine
SMDC +□	sodium methyl dithiocarbamate
2,4,5-T +*	2,4,5-trichlorophenoxyacetic acid
2,4,5-TB	4-(2,4,5-trichlorophenoxy)butyric acid
2,3,6-TBA +	2,3,6-trichlorobenzoic acid
TCA +	trichloroacetic acid
2,4,5-TES +	sodium 2,4,5-trichlorophenoxyethyl sulphate
2,4,5-TP	2-(2,4,5-trichlorophenoxy)propionic acid
trietazine □+	2-chloro-4-diethylamino-6-ethylamino-1,3,5-triazine
3Y9 □	tris-(2,4-dichlorophenoxyethyl)phosphite

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